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Wang joins the long march into micro market

by Robert Parry

WANG has joined the relentless march of mini and mainframe makers into the micro market.

Like the IBM Personal Computer – which legitimised the micro for computing's big boys – and recent products from DEC and Burroughs, Wang's new Professional Computer uses the Intel 16-bit family. It runs the MS-DOS operating system, written for IBM by Microsoft, on an 8086 chip with 128K memory expandable to 256K.

It offers floppy or hard discs and will also have a CP/M emulation option to run 8-bit application software.

But Wang is looking to more than just standalone computers for businessmen's desks. Its new machine will plug into its existing office automation products to act as a workstation for 2200 and Virtual Storage mini systems, and for Office Information System and Alliance shared logic word processing systems.

The Professional Computer will not be available before the end of this year in the UK, says marketing manager Ken Olisa. When it does come it will sell for about £2,000 in its most basic form, but a more realistic system for DP professionals will sell at about £6,500.

For this the user will get 256K RAM and five megabytes of Winchester disc, a monochrome graphics display, and software including MS-DOS, a Wang word processing package and the Multiplan financial spreadsheet package.

Plug-in boards for CP/M emulation and connection into the other office automation systems will come later still. The provision of 8-bit CP/M compatibility is seen by Olisa as a stopgap measure to some extent.

Shortage of 16-bit application software is still a limit to user acceptance, though the growing numbers of machines launched are fuelling software activity. It will also provide a growth path for current Wang users – CP/M runs on the Wangwriter word processing system.

Wang is up against strong competition for the high performance micro market. The IBM Personal Computer sells through unofficial importers for only £3,000. The ACT Sirius I, similarly an 8088-based machine, costs about £2,400, which is where the DEC Rainbow personal computer slots in. DEC's other new micros, the Professional 325 and 350, will sell for between £2,500 and £3,300.

Olisa expects the Wang to be sold through third party distribution for between £2,500 and £3,000 as a standalone machine.

OLISA . . . "8-bit CP/M compatibility is a stopgap."

Braniff 'victim of sabotage' claim

by Howard Karten

THE US Department of Justice is investigating charges that manipulations of computerised reservation systems may have played a part in the receot collapse of Braniff International Airlines.

The Texas-based carrier, which in recent months has been in financial trouble, last week filed for bankruptcy. The DoJ investigations follow a separte Federal Grand Jury investigation of charges made by Braniff.

Braniff used two separate airline reservation systems – one run on its own computers, and another which it obtained from American Airlines. Sam Coates, senior vice-presideot for Braniff, last week charged that American had carried out a "highly professional sabotage" effort against Braniff.

Among the charges are that American Airlines, via its Sabre reservations system, failed to display some schedules for Braniff flights on visual display terminals used by travel agents, in booking flights; that American deliberately changed some reservations from Braniff flights to those on American; and that American may have engaged in uther unsavoury activities.

Coates has declined to elaborate on the cbarges, while Americao haa denied them.

Several major US sirlines run their own reservatioo systems, and in addition serve as "hosts", selling the service to smaller airlines. In additioo, many such systems are tied togeiher for interairline messsge traffic via a Maryland company called Arinc. Many airlines use as a core system a reservation package sold by IBM.

This type of rough and tumble, which sometimes verges on illegal activities, is not unknown in American buainess. But the charges made by Broniff remain to be proven.

Olivetti to 'increase' Logabax workforce

by Jack Gee

OLIVETTI France has issued a strong denial that it plans to dismantle or reduce staff levels at Logabax, the French peripherals manufacturer in which the Italian firm holds a 65% controlling stake. It promises ambitious plans to make it a developing and profitable venture.

The denial answered allegations by French trade unions that Olivetti intends to take control of Logabax's commercial, sales and export operatioos. This would confine Logabax's activities to production, and would mean cuts in staff tu 500 from the present level of 1,000, the unioos said.

Olivetti France replied that it was far from reducing the workforce, it plans to raise it to 1,400 by 1984, and has submitted plans to achieve this objective in a document drafted for the Ministry of Industry's department for data processing and electronics.

One year ago Logabax announced that it was going into liquidation, but it was then bought out by the government. The liquidation operation continued trading as usual.

The optimism of Olivetti France is based on the renewal of the Logabax product range, which is regarded as being at the end of its tether.

Olivetti says it intends to centre Logabax with development of a 32-bit minicomputer and a new line printer, designed for construction in France's Minitel electronic telephone directory terminal.

Other future products include a microcomputer, of which one 100,000 units a year are planned. These will be designed for the mass market with special emphasis on educatinnal applications.

The French Ministry of Industry's answer to Olivetti proposals is expected before the summer. Olivetti also plans to hand over to Logabax the manufacture of Italian designed products.

In the framework of this expansion drive Logabax's research and development teams will be expanded from their present total of 80 to 110.

Olivetti said these measures should enable Logabax to balance its books this year, after making a loss of FFr100 million (£10 million) in the early months of 1981, before the Italian firm became the dominant partner. Thanks to an immediate revival under Italian management, Logabax finished last year with a loss of only FFr8 million (£800,000).

Users don't like Sitpro change proposals

by Donald Kennett

CONFUSION has beeo growing over a proposed standard for the exchange of data between organisations that most data processing departments haven't even heard about.

The proposal, called Dial (data interchange at the application level), is being developed by the OIS-14 committee of the British Standards Institution. It is based almost entirely on the work done by Sitpro, the quango set up to simplify international trade procedures, which received its first published specification in 1978 and a software package to support it 18 months ago.

But the "almost" is where the problem arises. Users of the Sitpro system would naturally be reluctant to make unnecessary changes to their implementations and would be happy if the Dial committee just put its stamp on the system as it is.

The Dial committee agrees that unnecessary changes should be avoided. But chairman Ray Walker says that for the long term a small number of changes are necessary to make the system more generally applicable.

The Sitpro system is suitable for large organisations exchanging large amounts of data in trading applications.

A joint statement from Sitpro and the British Standards Institution says that the cores of both syatems are identical and differences in the extensions can be overcome either by implementing additional functioos to control the choices or by svoiding the use of some of the options.

Wealth of comms for Decnet

by Donald Kennett

SUPPORT for Ethernet and gateways to IBM's SNA network architecture are included in the rash of communications products Digital Equipment has said it will introduce over the next three years.

Phase IV of Decnet is designed to give DEC users the widest selection of communicotions protocols in the industry. The company alrendy supports the X25 interoational packet switching standard and its own DDCMP digital data communications message protocol.

The first products in the programme are the £185 H4000 Ethernet transceiver and the cables for the network. They are to be available by the eod of the year. Users will have until the middle of next year to install their networks before the first DEC network attachments arrive.

Gateways to SNA and other oetworks and between Decnets will be based on a small PDP-11 with software to provide network management facilities. It will also support interactive 3270-compatible links.

Deliveries profit NEC, Fujitsu

by Kevin Cahill

TWO of Japan's key computer companies, Nippon Electric and Fujitsu, have recently revealed big profit increases for the year ended March 31, 1982. Deliveries of completed computer systems accounted for much of the improved profits, according to both companies.

Fujitsu pushed its pre-tax profit up by 54%, to £118 million on turnover 15.4% up at £1.58 billion. According to the company, 66.8% of the profit contribution came from the sale of computers, which rose by 17.4%.

Overseas sales of all Fujitsu products rose by 84.2%, and much of the good profit performance comes from sales to Siemens of West Germany and Amdahl in the United States.

Plessey has plenty of cash

by Kevin Cahill

VERY much in line with the latest predictions from stockbroking analysts, Plessey pushed profits up 32% through the £100 million barrier to close the year at £111 million.

Turnover rose to £963 millioo but the figure which attracted most arteotion was the cash balance of £237 million. Last year Plessey had around £62 million in short-term cash, about in line with the needs of a company of its size.

Constant speculation has centred on the idea of a bid for Ferranti, when 50% of that company's shares are released from the covenant restricting their sale in August. But Plessey's chairman Sir John Clark refused to be drawn on the subject.

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Back in profit for the second quarter

ICL on course for survival

by Kevan Pearson

ICL's survival plan is on course. The UK's largest computer manufacturer at last returned to profitability in the second quarter of its present financial year, and chairman Christophor Laidlaw repeated previous assertioos that the company will show a profit for the full year.

For the half-year ended March 31, 1982, ICL reported a trading loss of £600,000. Interest charges brought the half-year loss to £13.5 million, witb after-tax losses standing at £16.2 million.

The results are in line with most stock market predictioos, although there bad beeo bopes that the company would show a six-months trading profit.

Laidlaw emphasised that the loss was incurred entirely in the first quarter.

While giving no specific details of the order book, Laidlaw said it was "satisfactory but unspectacular". He blamed poor trading conditioos in Western Europe and the US.

Laidlaw said the rights issue made at the eod of last year would significantly reduce the level of interest charges the company would have to pay in the second half of the year. Proceeds of the issue came into effect only in January.

Market expectations that ICL will show a full year profit of £5 million to £25 millioo look fully realisable after the second quarter results. The first half trading loss of £600,000 compares with a £19.1 million loss in the same period the previous year, and a loss of £18.7 million for the whole of 1980/81. Laidlaw pointed out that ICL's second half year is normally substantially better than its first half.

Turnover for the half year was £335.1 million, compared to £318.4 million in the first six months of 1980/81.

ICL haa also announced that it is to acquire its joint leasing company, Computer Leasing Ltd, from the other participants, mainly financial leasing companies headed by subsidiaries of Lloyds and Midland Banks. The move was prompted, said Laidlaw, by "new treods in the computer Industry whicb play less emphasis on hire than ou specialised leasing packages for which Computer Leasing is unsuitable. Our plan is to integrate Computer Leasing's business with our own substantial direct bire business."

Laidlaw has said that the company has not yet drawn on the £200 million government loan guarantee which was recently extended. But it expects to draw on the loan in June and August.

LAIDLAW (right) . . . "Company will show a profit for full year." With him is managing director Robb Wilmot.

UK firm's breakthrough into Fifth Generation

by Claire Gooding

A TINY new Britisb company is taking a short cut past curreot Artificial Intelligence techniques to generate programs straight from logic. The theory could mean a breakthrough for Fifth Generation machines.

Computer Research Systems, knowo as Cores, is using a theory based on "Natural Logic" called Multiple Objective Boolean System, Mobs.

According to Cores, Mobs can communicate directly in natural human logic, without using either symbolic programming languages or the "Natural Language" techniques which have absorbed so much AI effort in the past.

The formulator of the theoty is Dr Fariedun Hilmi, who developed the Natural Logic technique during a long academic career at Cardiff and City Universities.

"It's not easy to explain as really there is no comparison with anything that's already available" said Hilmi.

"To all intents and purposes it's an AI processor. You can structure models without programming them, to as many different levels of relationship that are needed."

Mobs works by building a model or logical network, with relationships indicated by pointers. This network is expandable, allowing oew structures to be added and "learning" about its environment aa the knowledge base is increased.

The structure is "filled" with the basic items of the formula or application, and the system is then generated with a single command: "Like a very, very, higb level language" said Hilmi.

A commercisl product, called Prelude, has slready been developed from Mobs, primarily for insioess applicatioos. It is being sold on a bureau basis or as a complete system for software houses wishing to make use of systems generation, for £20,000.

However Hilmi sees Mobs as having further significance in the areas of Artificial Intelligence, digital and analogue system design, and robotics. He is hanging on to the results of his years of research because he feels that it will solve one of the most pressing problems of the Fifth Generation systems.

"Mobs deals with fundamentals and basics of logic – it explains the functioo of thinking, *not* language. This is the key to the Fifth Generation."

NEWS BRIEF

'Uncontrolled' introduction of technology

A REPORT released today (Thursday) by white collar union APEX says the introduction of new technology is happening on a large scale in an "uncontrolled fashion". The report is based on a survey last year of 30,000 APEX members in London and the Home Counties.

Cellular service

AMERICAN Telephone & Telegraph has applied for official approval to set up cellular radio manufacturing and service companies with a total of $26 million assets and a budget of $288 million next year. Mobile telecommunications services based on the cellular technique would be set up in 35 major cities witlin five years.

First-time finance

THE Cooputer Weekly/Barclsys Bank conference for computer entrepreneurs seeking first time finance, opens next Thuraday (Jtme 17). Speakers will include senior figures frum Barclays, finance institutions and cumputer companies. The conference will be at the Kensington Close Hotel in London, and there is still time to book places. Details from Sue Bonnell, IPC Conferences, on 01-643 8040 or clip coupon, puge 10.

Union fights

POST Office Engineering Union has three important fights on its hands, general secretary Bryan Stanley said at the uniuo's national conference at Blackpool this week. It must fight British Telecom maogement's new aggressive attitude in negotiations, the government's efforts to increase competition and private ownership in telecommunicatluns, and stagnation in the union's own structures.

IBM gives a preview of System 36

by Boris Sedacca

WITH the threat of anti-trust action behind it, IBM has resumed the practice of pre-announcing products before launching them on the market.

Last week IBM pre-announced System 36, a small business computer which plugs the gap between System 34 and the advanced architecture System 38. A select group of data processing managers in the US wbo are large-scale users of System 34 – running about 50 machines each in their organisations – were given the preview.

The machine is expected to be delivered in September. Mike Newman, managing director of Interactive Database Systems, which specialises in System 38 software development, believes the price will start at £45,000 and extend to over £100,000.

The machine will have one Mbyte of memory, a 200 nanosecond processor compared with 600 nanoseconds on the System 34, 768 Mbytes of disc storage (roughly three times that of System 34), and increased channel width of four bytes against two bytes on System 34.

The operating system will be fully compatible with that oo System 34.

System software elements from System 38 such as database management and the new RPGIII language will not be offered, although multiple indexing on index files and RPGIII-type commands will be available. According to IBM, future operating system releases will incorporate more System 38 functions.

NEWMAN . . . "Price will start at £45,000".

Micros in the surgery row

A DEPARTMENT of Industry scheme was announced this week which involves 150 micros for general practitioners and 20 micros and two minis for Family Practitioner Committees. The DoI will subsidise installation and maintenance by up to £2½ million.

But only two of the dozen companies in the market have been chosen by the DoI – CAP and Basingstoke-based British Medical Data Systems. Each will supply 75 British built systems to GPs, with first installations in September.

Tim Benson, chairman of the General Practice Computer Suppliers Association, sees it as a bad scheme. "It's grossly unfair. Some companies will undoubtedly drop out and it will freeze development."

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Summit call for united action on technology

by Jack Gee

LEADERS of the world's major industrial nations joined in a call for international actiun to exploit data processing and other advanced technnlogies for their own benefit and that of the Third World.

The main appeal came from French President Francois Mitterrand, host at the seven-nation Western Economic Summit held at Versailles last weekend.

Mitterrand urged the government leaders to set global goals for expenditure on research. He named artificial intelligence, telecommunications and robots as priorities for heavy investment.

The French President also called for greater emphasis on training, and co-operative programmes to introduce computers in schools.

All participants at the summit endorsed Mitterrand's proposals and agreed to set up a working committee with specific proposals for the next Econonic Summit to be held in the US in 1983.

But Prime Minister Margaret Thatcher and President Reagan showed coolness towards the heavy role assigned by Mitterrand to State planning and financial support.

Reagan recalled a study ordered by President Roosevelt in the 1930s witb the task of looking ahead a quarter of n ceutury.

Displsying a ballpoint pen to his fellow leaders, Reagan said: "The study failed to predict television, plastics, jet planes, organ transplants and even such a common item as a ballpoint pen."

Thatcher empbasised tbat countries with the lowest rate of inflation also bave the lowest rate of unemployment and make the highest use of new technology.

MITTERRAND . . . "Invest in artificial intelligence, ond robots".

'Blacking' threat to bureau

by Boria Sedacca

THE Association of Scientific, Technical and Managerial Staffs has threatened to black customer installations of Electronic Data Processing.

ASTMS is in dispute with the small Sheffield-based bureau whicb employs 45 people. Twenty unionised staff members are picketing for the reinstatement of a colleague, Jenny Wrigbt, following her sacking.

Management claims that her job as technical author was made redundant, but ASTMS claims she was victimised for organising union activities within the company. ASTMS produced as evidence a work schedule taking ber to the end of the year.

As well as its bureau operation, EDP is a dealer for the Ultimate range of minicomputers.

"If we do not come to an understanding with the company on this issue, we shall pull out all the stops," said ASTMS national officer Tim Webb. "We bave a list of users to which the company has sold systems and will instruct our members there accordingly.

"We cannot rule out any possibility. It all depends on the attitude of Richard Jowitt, EDP's managing director," he said.

A meeting scheduled for last Friday between Webb and Jowitt at the London office of ASTMS was cancelled by Jowitt, and the two were to meet again yesterday (Wednesday).

WRIGHT . . . Given her cards.

US merger creates software giant

by Andrew Thnmas

US-BASED Computer Associates is to merge with the Capex Corporation of Phoenix, Arizona, which it says will make it the third largest independent software company in the world.

CA will acquire all the outstanding shares of Capex in excbange for 1,200,000 of its own shares. At current prices, the purchase price is equivalent to $22.5 million.

Both companies are involved in the development and marketing of systems software for IBM and plug-compatible mainframes, principally in the area of performance and productivity enhancement.

According to UK managing director Harry Gordon, the merger brings together CA's DOS expertise and Capex OS produets. DOS is IBM's 4300 operating system, while OS is used on the larger machines.

"We'll be offering mueh more to the OS customer," said Gordon, "not just new produets, but more expertise and stronger support."

Gordon claims that the merger makes CA the third largest independent software company in the world, and that new sales staff are being recruited to bandle the expanded product line. Also on the cards is an expansion into other machine architectures.

"I can see us getting into other manufacturers in Europe within a year, starting witb Univac and DEC," said Gordon.

CA announced record results in May. Net profit for the year ended March 31 showed an increase of 97% to $2.4 million on revenues of $28.4 million. In the last quarter, profits were 114% up on the same period in 1981.

Receiver at hand-held data capture company

by Robert Parry

BRISTOL-BASED Image Data Products, manufacturer of the Data Tablet handprint input device, has gone into receivership. It is closing in the face of possible multi-million dollar orders from the US.

The staff of 18 was made redundant, but managing director Jimmy James is looking for new backing for the company to carry on.

Image Data's backers, the Throgmorton Investment Trust, Scottisb Northern Trust and the Edinburgb Trust, called in the receiver when James was in the US exploring orders for the device.

JAMES . . . "It's bizarre".

The produet has been a slow mover aince it was launched two-and-a-half years ago, but James is convinced it will make its impact. Two-thirds of the company's output was going to export orders, which will not now be met.

"It's bizarre really," James says. "I paid for the US trip myself and identified a $30 million market, with $6 million of orders from just one company."

The US is still the main market for the tablet, whicb recognises written charaeters by identifying changes in magnetic flux caused by the action of writing with a special pen. Its impaet there has caused a rival US product, from Pencept, to be withdrawn from the market to be redesigned – with an extra investment of $2½ million, he adds ruefully.

To get the eompany up and running again, James says holding on to the Image Data team is imperative.

He is convinced he will find the backing the company needs to get going again, and is looking outside the UK as well as nearer bome to find it.

BT orders 39 HiNets

by David Kennett

BRITISH TELECOM has ordered 39 HiNet local area networks, costing £527,000, from Extel for use in repair service centres and telephone area offices.

HiNet networks made by Extel's Californian subsidiary Digital Microsyatems, support only 32 user stations communicating at up to 9,600 bits per second, in contrast with mucb faster data rates and capacities at the more glamorous but more controversial end of the local area network business. But BT says the cspacity is sufficient for the number of workstatinns it wants to have sharing the same data.

The order includes 279 user stations – an average of seven per network – and the Winehester disc-based atorage capacity in the network controllers ranges from 22 to 63 Mbytes.

Tbe networks, 20 of which are to be installed in the London area, will ensble engineers to access fault details and cost information held on disc.

NEWS BRIEF

Apple TV campaign

PERSONAL computing hit s[illegible] smoll screeo again this week [illegible] the UK's first television advert[illegible] ing campaign fot microcomput[illegible] Apple is featuring during a break in News at Ten all this w[illegible] on Thames and Central TV [illegible] boost sales of Apple II and [illegible] micros.

Apple is no stranger to such a[illegible]vertising in the US, where it "[illegible] coined" IBM's Personal Comput[illegible] on TV last year.

First in UK

SUN Life Assurance of Brist[illegible] Xerox's first UK customer for [illegible] Ethernet local area network. [illegible] £92,000 order for a word proces[illegible]sing application includes [illegible] Xerox 860 information process[illegible] two hard disc based file serv[illegible] and four printers with autom[illegible] paper feeders.

Users' associatio[illegible]

USERS of Honeywell's D[illegible] systems have formed a Bull[illegible] Management Systems Users As[illegible]ciation, as a joint enterprise [illegible] Honeywell Control Systems' co[illegible]mercial division. Representat[illegible] from industry, banking and fi[illegible]snce, British Telecom, Depart[illegible]ment of Health, transport and u[illegible]versities discussed proposals for the association, inteoded to provide shared objectives and benefi[illegible] for Honeywell snd its 100 Deb[illegible] users.

Digital study

PACTEL has won a contract fr[illegible] British Telecom International for [illegible] study designed to identify the re[illegible]quirements of likely customers fo[illegible] future international digital co[illegible]munications services based on the Satstream, Megsstream and Kilo[illegible]tream satellite and leased line dig[illegible]tal servicees curreotly being promoted in the UK.

Chinese software

HONG KONG's main distribut[illegible] for the Japanese Sord microcomputer, Wing Group, has developed software to turn the Sord into a viewdata editing terminal capable of displaying Chinese characters and of acting as a frame store or automatic display system. It is selling the aoftware for US$50.

Videotex show

A STORY on Page 2 of our May 13 issue referred to the Videotex 82 exhibition aod conference in London. The proper name for the ahow wns Videotex Systems 82. More details from: IPC Exhibitions Ltd, Surrey House, Throwley Way, Sutton, Surrey SM1 4QQ. Telephone 01-643 8040.

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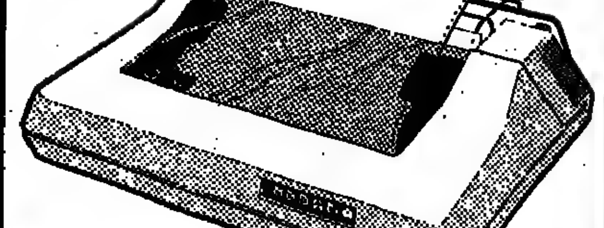

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EDITORIAL
Inquiries: 01-661 3500 ext 3542/3541
Editor: David Craver 01-661 3122
Associate Editors: Kevin Cahill 01-661 3041; Boris Sedacca 01-661 3052
Software Editor: Claire Gooding 01-661 3043
Micro Editor: Robert Parry 01-661 3044
Reporters: Kevan Pearson 01-661 3042; Donald Kennett 01-661 3049; Philip Hunter 01-661 3051; Andrew Thomas 01-661 3500 ×3422; Maggie McLening 01-661 3500 ×3423; Sarah Hardcastle 01-661 3027
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Deputy Chief Sub-editor: Nancy Pocock 01-661 3500 ×3545
Sub-editor: Julia Cottertit 01-661 3500 ×3544

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BRANCH OFFICES
Birmingham: Lynton House, 202 Walsall Road, Birmingham B42 1BA. 021-356 4836
Manchester: Grove House, Skerton Road, Manchester M16 0WL. 061-872 8861
New York: 205 East 42nd Street, New York, NY 10017. (0101-212) 867 2080

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ARMSTRONG . . . "No sense in losing control".

UK disc firm is 'not for sale' says DRI

by Kevin Cahill

THE future of United Peripherals Ltd, the British Technology Group subsidiary, lies firmly in UK hsnds.

Control Data Corporation's bid for ownership of Wiosford-based UPL died last August, according to DRI group managing director John Armstrong.

Armstrong also revealed thst United Peripherals was in full production and would report turnover of £42 million for this financial year.

Admitting that the start-up costs at UPL had been substantially higher thao anticipsted, Armstroog said the eompany wss emphatically not for sale.

Armstrong, who heads the British Technology Group-owned Data Recording Instruments group, which in turn has a 76% shsreholding In United Peripherals, said thst UPL was now the main supplier to the DRI operating subsidiaries.

"There is oo commercial sense in losing cootrol of an operation in which so mueh has been invested," Armstrong continued. He also claimed thst all four operating subsidiaries of DRI were now profitable, before interest charges.

However, those interest chsrges could be high. The accounts of the British Technology Group in its esrlier incarnation as the National Enterprise Board show start-up losses of £20 million for 1979/80 and 1980/81 at United Peripherals.

Armstrong clarified the losses by revealing that a huge write-off of Diablo stock beld by Data Recording Equipment hsd been included in the figures.

Based on a purchase price of £6.9 million to ICL for the 27-acre Winsford site, and £5 milbon in actual start-up costs, those stock write-offs could have been as high sa £8 million.

Tbe £5 million figure for start-up costs is based on Control Datu sources in the US.

Armstrong appears to have been sueeessful in persuading the British Tecbnology Group to hang on to its investment despite the loss.

Micro Focus extends its software thrust into Europe

by Maggie McLening

EXPORT award-winning software house Micro Focus is to extend its marketing attack into Enrope to coincide with the increasing use of 16-bit microcomputers.

An agreement has been signed with Vector Internationsl of Belgium to market Micro Focus system software products slongside those of Digital Research. They will be sold with Data Recording Instruments hardware to provide "one-siop shoppiog" for users. This type of linked diatribution is seen as a definite trend by Stewart Lang, UK managing director of Micro Focus.

"The world software distribution market is coming into shspe and we seem to be one of the keys in it – another part of the jig-saw puzzle," he said.

Since 1980 Vector Intemstional has been the exclusive European distributor for US-based Digital Resesrch CP/M products, together with its Pascal/MT+, CBasic, CB-80 and PL/1. Vector has set a target for 1982 turnover of £2½ million, over half of wbich will come from software sales.

"We calculate that this deal will produce sales of Cobol products worth over £1 million during the next two years," said Lang. "Having just returned from a very successful time at the Hanover Fair we are confident about the success of this new export drive.."

Micro Focus has already launched export campaigns in the US snd Japan.

Micro Focus will continue to sell CIS Cobol independently in the CP/M market, but only to manufacturers and larger end users.

LANG . . . "World software distribution market ü coming into shape".

£3 billion will buy 80,000 jobs

by Jack Gee

NEW jobs for 80,000 people could be ereated in France's computer components and electrnnica industry if the government gives the go-aheod to a £3 billion emergency finanee package.

The package would encourage investment by the major companies nstionalised at the beginning of this year, according to Industry Minister Pierre Dreyfus.

The companies affected include computer maker CII-Honeywell Bull, Thomson-Brand and Compagnie Generale d'Electricite.

Dreyfus wsnts nine billion francs (about £900m) in addition to funds already included in the 1982 budget. Total requirements for the next two years will be 30 billion francs (£3 billion).

The Minister said: "France can hope to rank among the leading electronics manufacturers in the world, obtain n favourable trade balance and create 80,000 jobs."

Dreyfus aaid government support would be withdrawn from companies in electronics and other industries which operate in an unprofitable and uncompetitive manner.

Apple looks set to clamp down on retailers

APPLE Computer may apply severe restrictions on retail outlets carrying its computers.

The company last week made moves in the US to give it a stronger voice in selecting the physical locations selling its hardware, and it will sbortly extend that philosophy to European countries as well.

In recent letters to franchise chains such as Computerland, the Computer Store, and others Apple said it had to have site-selection privileges for all future locations.

Individual stores in those chains currently carrying Apple computers would not be affected. Apple said it was making the move because of concerns of over-population of stores.

Although laws vary from country to country, the spokesman said its legal staff was currently investigsting tbe situation. He did not indicate how Apple would be able to stop effectively the purchase of Apples for retail sales by a group of computer retailers banding together.

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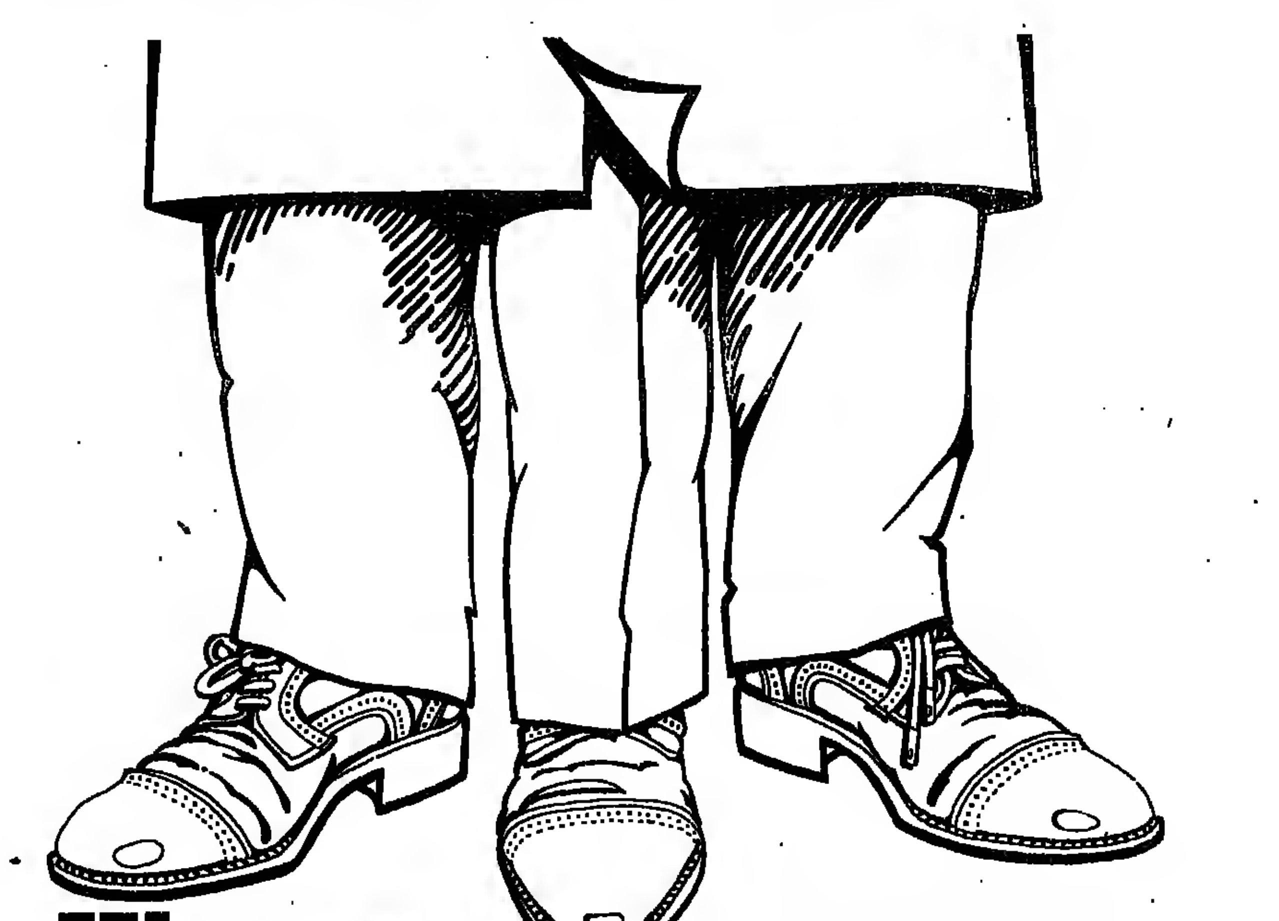

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FENNER . . . "Microcomputing our next major sector of expansion".

Hitachi moves into UK business micro market

by Robert Parry

JAPANESE industrial giant Hitachi is entering the UK microcomputer market, with emphasis on business systems.

Hitachi has chosen the UK to be the first country outside Japan where it will sell its 16-bit micro, although it will not appear here until early next year.

While a major manufacturer of chips, computers and video monitors – Hitachi claims to supply 30% of monitors worldwide and that 30% of the world's micros rely on its technology – the company is best known in the UK for its consumer electronic products. The same company that sells these products, Hitachi Sales (UK), will look after the microcomputer products, working through a network of about 100 dealers which is being set up under a computer products division headed by Ted Marshall.

The spearhead of Hitachi's attack on the UK market will be its 16-bit machine. Built much in the IBM model – an 8088-based machine running under MS-DOS and aimed primarily at the business user – it has been sold in Japan since last September and makes its first appearance outside Japan at this week's National Computer Conferenee in Houston.

But the UK will be its first foreign market, says Marshall, who is convinced it will become a major force on the UK micro scene. He is backed in this by Hitachi sales marketing director Stan Fenner, who sees microcomputing in the UK as "our next major sector of expansion."

The machine will sell for less than £3,000, with RAM expandable from 64K and high resolution display capabilities in 16 colours. It will have Basic, Cobol, Fortran and Pascal as well as assembler for programming.

Part of the reason for the delay in introduction is the continuing shortage of purpose-written programs for the current erop of 16-bit machines.

"We have no intention of releasing the machine on to the market until we have a good range of application software – and until dealers have been trained," says Marshall.

Auditors attack data protection plans

by Boris Sedacca

THE government's White Paper on data protection has attracted fresh criticism from a professional body.

In a formal response to the government's request for comments on its proposals, the Institute of Internal Auditors in the UK stated: "It is a matter for considerable regret that the White Paper is so indecisive and hesitant and fails to consolidate on the discussions of the last year.

"What may be an attempt to offer flexibility results in confusion and uncertainty and a regrettable lack of leadership. By and large the articles of the Convention of the Council of Europe have been included in the proposals in the White Paper: clear, precise wording has in some cases been altered and convoluted in such a way that confusion and uncertainty results."

The IIA goes on to say that sanctions are quite unacceptable in their proposed form, that no provision has been made for data subjects to resolve differences out of court, and that the piecemeal and qualified treatment given to special cases and exceptions must exacerbate the contentiousness of the topic.

BP in-house system to be sold outside

by Maggie McLoning

A integrated plant maintenance system currently running in BP installations in the UK, Canada and Belgium is to be offered for general distribution by BP subsidiary Scicon Consultancy International.

Called Teroman, the system is aimed specifically at companies involved in petroleum, chemical and pharmaceutical, mining, defence or transportation industries.

Peter Huitson, Teroman project manager, says the launch of the system is well-timed. "Much of the equipment installed in the UK is now ageing, being perhaps 10 or 15 years old, and requiring more maintenance because of this. The recession means that equipment tends to be used for longer than its intended life in any case", he said.

A workforce of over 3,000 is not untypical in an oil refinery, and Teroman has been designed to coordinate the efforts of this force into consistent maintenance of plant which may be spread over a wide area.

"We have taken a generalised approach, to complement existing procedures", explained Huitson.

HUITSON . . . "Well-timed".

French Teletel goes nationwide this year

by Jack Gee

TELETEL, France's interactive videotex venture which has been tested for the past year by a community of 2,200 households in a Paris suburb, will be put into service on a national scale in October.

The French Telecommunications Authority has announced that terminals – now officially called "Minitels" – will be rented out at 70 francs (£7) a month by Telecom sales offices in the same way as telephone sets. Subscribers have been told they will not have to wait more than three weeks for delivery.

Service providers for Teletel will be able to sign bulk rental agreements with French Telecom, then hire their Minitels to customers.

The rental for Minitels will be incorporated in users' telephone bills in areas where the electronic telephone directory is being tested. The current directory test covers part of Brittany, but is soon to be extended to the Paris area.

French Telecom plans to install about 20,000 Minitels this year.

SALES BRIEF

Fisons buys HiNet local area network

FISONS, the horticultural and pharmaceutical company, has installed a 500 Kbit-per-second HiNet local area network made by Extel's California-based subsidiary Digital Microsystems. The network, which was supplied by Seven Systems of Witham Essex, will be used to provide CP/M-based processing facilities to the 10 workstations attached.

By the end of the year, Fisons plans to have 20 of the permissible maximum of 32 workstations attached to it.

Mascot for SPL

SPL INTERNATIONAL has followed up its design study for the Admiralty Surface Weapons Establishment by winning the contract to develop a Mascot (Modular Approach to Software Construction Operation and Test) pre-processor. The pre-processor will extend Coral 66, the language the MoD has standardised on, to provide the features used in building Mascot-based systems.

Into Gaelic

LUCAS Electrical has ordered a Compeds Gaelic integrated circuit design system for its Mere Green semiconductor factory. The system will be supplied with a Prime 150 mini, two workstations and two plotters under a turnkey contract worth over £170,000. Lucas' research centre has used a Gaelic system for three years.

Army order

ROYAL Army Pay Corps has completed acceptance trials on an 8,000 line-per-minute Honeywell PPS non-impact printer and has ordered a second to be installed next April.

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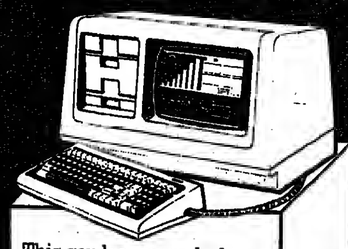

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Case tackles user worries on local nets

by Donald Kennett

USER anxieties about local data networks are being tackled by UK data communications manufacturer Case. It has combined speech-plus-data technology with a data switch based on its DCX range of wide area network switches and multiplexers to build a system – called Grapevine – which uses existing telephone extension wiring but keeps data switching separate from voice switching.

"It gives users quick and easy terminal connections without muckiog up, their decor," said Case chairman Duncan Fitzwilliams.

Product planning director Derek Laval, one of the company's founders, added: "The wiring problem is the one that obsesses people most. But it is not enough to address that problem on its own, so Grapevine provides a high degree of connectivity. Nobody else has that combination, nor does anyone else have a local system integrated into wide area network."

The connectivity provided by Grapevine includes user-to-user call selection as well as computer port contention with bunting and queueing. A Grapevine switch can start with a capacity of eight channels and build up four at a time to a maximum of 240 channels. It can then be connected via a composite link in a DCX network to another 240-channel unit.

Outside connections can be set up through a Csse MSX message switch to the public telex network. An enhancement on the way for the MSX will allow dialled connections to be made automatically over the telephone network. Accesa to X25 packet switched networks such as British Telecom's Switchstream One is available through DCX system gateways.

Like DCX, Grapevine is based on the Texas Instruments 9900 16-bit microprocessor. In a fully-configured 240-channel unit there will be 70 of them working together.

The speech-plus-data modules, which are made by Teltone in the US, are claimed to be the first to gain British Telecom approval for operation on telephone extensions. Because they are not limited by the bandwidth of the public telephone network, they can support full duplex ssynchronous transmission at up to 9,600 bits per second, compared with a maximum of 1,200 bps for equivslent public network devices.

Prices start at £5,000 for an eight channel switch, which rises to £9,000 when fully configured with speech-plus-data units and gateways. A 32-channel switch costs £20,000. The speech-plus-data unit plugs in between the telephone and the wall socket at the terminal end and can be unplugged for line testing.

FITZWILLIAMS . . . Quick and easy.

France withholds US technology for Soviet-made micros

by Jack Gee

FRANCE has jeopardised s major contract with the Soviet Union by refusing to deliver equipment for making Amerieaa-designed microprocessors in a Russian factory.

French officials declined to identify the US firm involved in the venture which concerns Thomson-CSF MT 20 time-division telephone exchanges. The factory was due to be opened at Oufa next year.

The row between the French and the Russians became public knowledge after a government delegation from Paris told its Soviet partners at a joint Trade Commission meeting in Moscow that the US technology could not be delivered.

The French explained that the microprocessor know-how was subject to an American embargo imposed on exports of sensitive equipment to East European Communist staaes.

The embargo was imposed after the Army seized power in Poland last year.

In an attempt to appease the Russians, France is offering to supply the computer components itself, or to deliver French instead of American microprocessor technology.

The French Ministry of Industry said the Soviet contract, which was signed in 1979 by President Giscard d'Estaing's government, did not conform with French commitments to COCOM, the NATO-sponsored organisation which coordinates efforts by Western countries and Japan to prevent the Communist powers obtaining access to advanced military information.

President Francois Mitterrand has been increasingly insistent on the COCOM arrangements, in contrast with the flexible attitude of Giscard's officials.

Last year Mitterrand imposed a delay of six weeks before approving a 1.8 billion francs (£180 million) contract for the sale by Thomsou-CSF of electronic equipment for the 3,000-mile Soviet natural gas pipeline from Siberia to Western Europe.

Technology exchanges to be set up by NCC

by Boris Sedscca

THE National Computing Centre is seeking to extend its areas of activity by instituting a new type of membership.

The NCC is setting up a number of groups to be known as Information Technology Circles which will allow subscribers to work together in workshops and to exchange information.

But the Centre is coming under fire for neglecting other areas, particularly its trsining packages which form the basis of short courses at colleges of higher education and polytechnics. Plans to resolve this problem will be released soon.

FAIRBAIRN . . . "Our policy to update"

Four IT Circles will be set up initially to cover office technology, communications, data processing and systems engineering, and security.

The NCC claims that subscribers to I'f Circles will be shle to influence tlic direction of its research and development programmes. It is planning to invest £750,000 in the scheme this year.

Meanwhile, plans are going ahead to update its existing training packages and to create new ones. The packages are sold to private companies for internal training programmes, as well as to education centres.

Students of the NCC systems analysis cerificate at the Polytechnic of Central London, most of whom have been sent nu the course by their employer, the Central Computer and Telecommunication Agency (CCTA), have criticised the course material as being outdated.

Commenting on these criiicisms, David Fairbairn, director of the NCC, said: "It is our policy to update course matcrial where changes have taken place."

The NCC says the Systems Analysts Examination Board is currently revising the syllabus for the NCC certificate.

US progress on standard for electronic mail

by Howard Karten

A DRAFT US federal information processing standard (FIPS) for electronic mail is nearing completion and will shortly be forwarded to Commerce Secretary Malcolm Baldrige.

The document details the fields an electronic mail message must contain if it is be able to communicate with other electronic mail systems.

If the draft standard is adopted, all vendors supplying systems to the federal government would be required to comply with it.

Given the economic clout of the federal government, such a move would be a big spur towards standardisation in the private sector as well.

According to Shirley Watkins, manager of National Bureau of Standards' computer-based office systems project in Rockville, Maryland, the document under consideration concentrates on message formats and avoids specifying internal details.

Watkins estimated that final adoption of the standard by the Commerce Department could come as soon as six months from now.

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Ship system 'operable from land and sea'

by Kevin Cahill

THE first shipboard computer-based inventory and preventative maintenance system will be installed on a Texaco tanker next month by London-based software house Altergo. The claim to uniqueness rests on the fact that the system, based on a shore-installed IBM System 34 connected by satellite to a System 23 on the ship itself, will be fully operable from land and sea.

According to Norman Edwards, a consultant with Clearview, who engaged Altergo to write the systems specification and the program, Clearview was unable to find a ready-made package.

Clearview has acted as constultant to Texaco for several years and drew up the user requirement for the system.

An international tender followed, which was won by Altergo.

Clearview has given Texaco a commitment that full cost recovery on the investment will take place in less than 12 months.

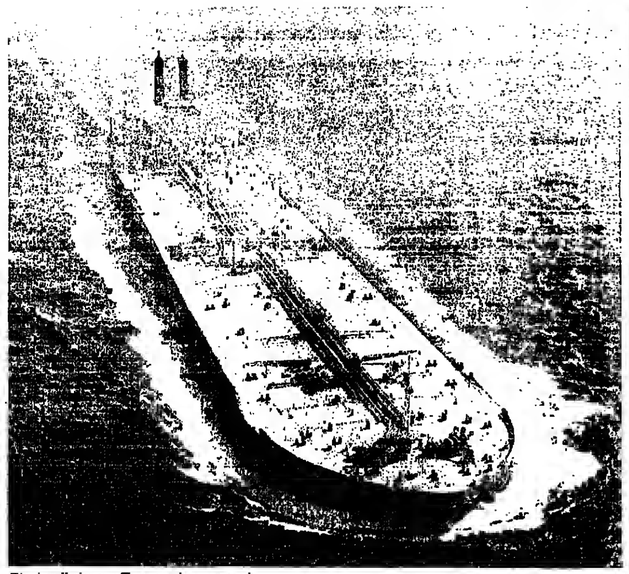
The overall cost of the system, which is expected to be installed on 10 of Texaco's fleet within the next year, is likely to be over $2 million.

The scope for application of the system, once it is installed and proven on the Texaco fleet, is tremendous, Edwards says.

There are lots of manual or part mechanical systems available, but none which gives the shore-based fleet management team complete control over the level and availability of spares inventory on board, no matter where a ship is in the world, he adds.

Failures of a specific item or part can be reacted to immediately, new parts located and transferred to the vessel in trouble and preventative maintenance initiated elsewhere.

In order even to consider the system, the Altergo/Clearview team had to spend months evaluating the performance of the System 23s, particularly the disc, at sea on Texaco ships.



First installation on a Texaco tanker next month.

NEWS BRIEF

DEC price cut on office workstation

DIGITAL EQUIPMENT has cu the price of its DECmate offic workstation just a year after it worldwide release. A typical DEC mate word processing station, no costs £4,960, while communica ing terminal configuration wo £3,332.

New user group

USERS of the General Datab System (GDS) of Applied Re search of Cambridge, have set up formal group to exchange idea The group will be chaired by J.M. McCarthy, of the architects B som, Pack und Roberts.

More memory

FOLLOWING a fall in price of 2 Kbit RAM chips, Tandem has corporated them into the memo boards of its Tandem Nonst computers to yield an increase memory capacity of each process from two to eight Mbytes. Th overall physical memory of a fu processor NonStop II system w increase from 32 to 128 Mbyt with the new boards, which co £20,160 each.

Laser checks

A LASER scanner has be installed by a Reading warehou to record automatically the arri and departure of goods. The sy ner, made by Real Time Contr is linked to a warehouse com system, and avoids the need fo every check in or check out to be rung up on a till, or manually ke tered into the system from a log board.

Ada contract

SYSTEMS DESIGNERS of Cam berley has won a £100,000 exte sion of an existing contract fro Olivetti to develop a portable Ad programming environment known as MAPSE, for minicom puters made by Olivetti and Christian Rolvsing. The Adam pilot developed for the project will later be adopted by two Ad consortia sponsored by the Com mission of the European Comm unities.

Omnix support

IN a deal worth £200,000 over the next 18 months, General Comput er Systems (GCS) will provide support throughout the UK for its Omnix microcomputer system made by Computer Automation. The announcement came a week after the directors of GCS had bought control of the company from the original US parent, the Telex Corporation, for $1 million.

Access to Japan

THE Confederation of British Industry has urged the European Economic Community to tackle the problem of the growing trade imbalance between Japan and Europe. It says the maximum pressure should be exerted on Tokyo to achieve concessions on access to the Japanese market.

Software release

SOFTWARE which offers IBM mainframe users with an existing SNA file control network facilities similar to Host Command Facility (HCF) and Distributed System Executive (DSX) has been released by Computer Automation. The package, called SyNET, operates on the SyFA network to gather files from remote processors, catalogue them in libraries kept on the host computer, and then redistribute them selectively.

Finance system

OPERATING under ICL's Trader Point agreement, service company Baric is to market the Sorited financial planning system on the Perq high resolution graphics workstation.

More companies act on DP training

by Philip Hunter

INITIATIVES from the government through the Manpower Services Commission and the Department of Education and Science have stirred up activity in computer training.

At the same time the government has urged industry to work harder with the higher education system to produce more qualified technical people, particularly in computing and electronic engineering.

William Waldegrave, Minister responsible for Higher Education, told Bristol branch of the Association of Polytechnic Teachers that expansion in areas like computing needed to be sustained at a time when student numbers were expected to decline.

"The computing field will be especially important as industry comes out of the recession and computing techniques begin to be applied more widely," he said.

Increased activity in training has come about partly as a result of the Grants for Employers Scheme run by the Manpower Services Commission. Under this scheme, companies sending employees to courses approved for the grant by MSC receive subsidies. These run at £60 a week for programmers, and £80 a week for analysts.

Two companies whose courses have won approval recently for MSC subsidies are Data Training and Kalamazoo Business Systems.

Data Training runs five-week courses in Ansi Cobol, as well as specialist courses for experienced programmers and analysts using IBM and ICL mainframes. The Cobol course costs £960 for the five weeks, which reduces to £660 plus VAT with £60 a week subsidy for programmers.

Kalamazoo offers a series of three three-day courses, to run in consecutive weeks, designed for businessmen who are about to buy or have just bought, a microcomputer for the first time.

The DES has also given approval for SERC, the Science and Engineering Research Council, to commit £1.1 million over the next three years to a project of technological "topping up" courses run in conjunction with the Open University.

These are aimed at science and engineering graduates who have worked between five and 15 years in industry and who, SERC feels, might have difficulty keeping up with the pace of technological change. Two key areas have been identified for the courses: computer applications and manufacturing.

The Manpower Services Commission has launched a pilot project in the use of computer-based training methods for young people in Coventry. The two-year £1 million project is aimed at provision of better training programs. It is based on equipment and services supplied by Control Data, which developed the Plato system, now used widely by industry and academic institutions.

Control Data has helped to establish new UK company, Intra, to offer consultancy to companies wanting to apply information technology to industrial training.

"I believe improved training in British business can make a significant contribution to unemployment," says Intra's managing director, Geoffrey Holland.

HOLLAND . . . Improved training can cut unemployment.

US project planner launched in UK

by Philip Hunter

AN upmarket system for planning and monitoring large projects has been unwrapped in the UK following two years of service in the US. Called SRMS, it runs under the IBM VM/CMS operating system, and is available on the IBM 370, 4300, and 3000 Series computers or their plug-compatible equivalents.

SRMS will be marketed in the UK by computer service company Tymshare. It was developed in the US by Interactive Logic whose vice-president, Marilyn Chingas, claims that it is the first system to combine powerful database technology with full interactive facilities such as "What if" type analysis.

In the US, SRMS has been used mainly on large engineering and software projects to plan the allocation of resources.

Although there are many project planning packages on the market, there are few others which incorporate project management, resource allocation, precedence scheduling and financial planning. One is Internet 80 developed by the UK company Computation Research and Development and marketed by SIA.

Tymshare's technical manager Keith Roberts, describes Internet as equivalent to SRMS. But SRMS, he says, has the advantage of being easier to use, is fully interactive, and has simple English language commands.

Internet on the other hand is portable across a range of hardware, including the IBM 370, Control Data 6600, Prime and ICL 1900. It uses a preprocessor to generate from a common source Fortran code local to the machine on which it is implemented.

According to SIA, which markets Internet on a bureau basis, it does not matter much whether a large project planning system runs on a batch or time sharing basis. So long as the data files can be quickly set up and edited online, results can be produced quickly on a batch basis.

"The thing has to go away and do its analysis in any case," says SIA's management systems sales manager Alan Peast, who admits, however, that many people would opt for a fully interactive user friendly system.

That SRMS can only run under the IBM VM/CMS operating system is not seen by Tymshare as any great restriction. "The market is huge," says Tymshare's UK London area manager, Jerry Goldman. There is anyway a shortage of software running under CMS, and "SRMS fits the niche nicely" he adds.

Rapid rise in graphic sales predicted

by Sarah Hardcastle

SALE in Europe of computer graphics for business applications will nearly quadruple by 1985, and increase more than tenfold over the whole decade, according to a Frost and Sullivan report.*

Worth $40 million in 1980, the European market will grow to $150 million by 1985 and $550 million by 1990. The UK market, worth $8 million to 1980, will increase to $102 million by 1990, placing the country third by value behind Germany and France.

Business applications now comprise 10 per cent of the entire European computer graphics market with slide generation the main business use, the report says.

* European Computer Graphics to Europe, 1980, Frost and Sullivan, 104-112 Marylebone Lane, London W1M 5FU.

Floating Point signs up with Univac

by Howard Karten

ARRAY processor manufacturer Floating Point Systems has signed a co-operative marketing agreement with Sperry Univac. Oregon-based FPS already has similar agreements with IBM and Digital Equipment.

Large-scale scientific and engineering users are the targeted market for the new arrangements. The two companies participate in joint meetings with prospective customers, but each will retain responsibility for independently proposing, installing and maintaining their respective systems.

Sperry and FPS will jointly develop an interface between the FPS164 64-bit array processor and the Sperry Univac 1100/80 and 1100/60 mainframes. The FPS164 operates at 12 megaflops (million floating point operations) per second.

A multi-user handler to interface the FPS AP-190L 38-bit array processor with 1100/80 and 1100/60 computers is being made available for big number crunching operations.

FPS has also extended its arrangements with DEC to include the combination of a VAX computer and an FPS array processor to be sold to scientific and engineering markets. Applications will include structural analysis, circuit simulation, and seismic analysis.

● UK systems house CAP has signed an OEM agreement with Floating Point for the FPS100 array processors. FPS UK sales director Steve Markham welcomed the agreement, which he says will be "mutually beneficial to both companies". CAP has already taken seven FPS100s, valued at a total of some £300,000. One of the systems will be supplied to the Joint Speech Research Unit at Cheltenham.

MARKHAM . . . Mutually beneficial.

Lay-offs at two more US companies

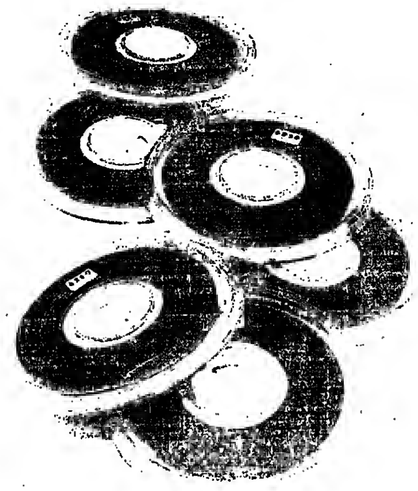
by Howard Karten

TWO more US companies are feeling the effects of the current recession. Formation, a New Jersey-based maker of IBM plug-compatible systems, has announced that it is laying off 20 per cent of its 325 employees. Formation, which last year had revenues of 17 million, is also reducing its salesforce.

Current economic conditions and a levelling off of the order rate were blamed for the lay-offs.

In Florida, Modular Computer Systems shed some 50 of its 1,000 employees "in those organisations which lack suitable work to support Modcomp's current business plan", according to company president Gabriel Rocca.

Buying software vs. Buying a software company



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MICRO NEWS by Robert Parr

Microprocessors are moving up market . . . . . . but is the software development support managing to keep pace?

Support for users is key selling point behind latest high performance chips

SUPPORT for uaers is the key area behind the recent spate of high performance microprocessor announcemeots. Developmeot software and hardware integration aids have to be available – and be seeo to be available – soon after the chips are talked about if they are to make their impact in the marketplace.

Iotel, Motorola and National Semiconductor have all released detaila nf 16/32-bit microprocessors in the past couple of months, and are all pushing development support.'

Mntorola, wbich announced extensions to its 68000 family in March, has released an update for the Exormacs development syatem, including a symbolic debugger ond an improved macro assembler for the 68000 and 68010, and a new Pascal compiler.

It gives apeed increases over the previous Pascal, with a compilation speed of 650 atatements per minute on average compared to the old version's 250, aod better code optimisation. Object code is on average 40% smaller than that produced by the previoua Pascal version.

But software development tools like this are not the only treats io store. The end of this year will see a real time emulator for the 68000 running at 10MHz, which will take the form of a family interface module to the Exormacs system plua a personality module.

Intel, with its iAPX 186 and 286 additiona to the 8086 family, is also getting off the mark with software development and high-level language packages. Last week it announced ita first software kits for the 286 to start appearing in July.

The aoftware developmeot package contains tools to allow programmers to design and configure protected multitasking systema. It includea uulities for program linkage and system building that make the memory protectioo features of the 286 traosparent to the application programmer.

The high-level languages Intel is to offer first are PL/M, Pascal and Fortran, and the compilers will be available separately for application software development. PL/M-286 is a syatem implementation language that offers built-in accesa to the memory protectioo features of the 286.

With these products Intel provides the means fnr users to design directly with the 286 higb performance microprocessor, rather than upgrading designs using the 8086 processor and development tools.

But Intel is quick to point out that the new 286 software development tools are compatible with tbe 8086 products already around.

RADA . . . *In-system emulation is available with hardware launch of a microprocessor for the first time.*

Family ties are important in the race for the high performance microprocessor market, and those already well established – as Intel and Motorola are – put great emphasis on continuity of designs. For the 186 processor Intel announced last week in the UK, the existing 8086 design tools and programming languagea can be used to develop code.

But even there thinga are looking up, and ASM-86 and PL/M-86 will be updated in September to support the extra instructions the 186 haa.

Both the Intel and the Motorola 16/32-bit families are rooted in products with significant histories and established development tools. NatSemi's entry into the race last week came – as it had to if the 16000 family ia to make an impresaion on the market and gain widespread user acceptance – with a clutch of development tools to nccompany the 16032 hardware.

A crosa anftware developincnt package, to produce 16032 code and running at first on a VAX 11/750, consista of an assembler, linker, librarian and symbolic debugger. A Pascal compiler will be available later in the year, and versions running on NatSemi's own development system Starplex.

An in-system emulator is also available for delivery in September. "This is the first time in-system emulation is available with the hardware launch of a microprocessor," claims NatSemi's Europeao marketing manager for the 16000 family, Col Rada.

Cifer plans £20m turnover by 1986

INTELLIGENT terminal and desktop computer builder Cifer Systema of Wiltahire has extended its factory to increase production capacity to over 10,000 unita a year.

It is the start of a planned expaosion programme that will increase staff levels to 250 from the present 150, and push thia year's expected £5 million turnnver to £20 million over the next fnur years.

Marketing director Stuart Gregory puts Cifer's growth and succesa down to ita commitmeot to R&D, and to ita stable manufacturing base well away from London. He alan emphasises the importance of Cifer's use of tested technology that is tcchnically sound and cnst effective.

The expansion plans for the ncxt year include additions of new casc atylea for thc desktop producta, and the introduction of 32-bit microprocessors, mcgabyte memories, and a bigger rangc nf Winchester disc drivea.

● British micro manufacturer Casu is also set fair for continued financial growth and factory expansion. The company, which is very much based on British Telecom'a purchase of its Super C and Multi C microcomputers, is ahead of target for a 100% growth rate in 1982, says marketing and sales director John Burrow. The company recently revealed billings of £1 million for the month of March.

Casu has just produced its thousandth microcomputer and will soon be moving to a new factory, more than tripling the production capacity of its present factory in Ruislip.

LSI develops a 'task oriented' processor

CUSTOM and standard chip maoufacturer LSI Computer Systems of Melville, New York, has developed a task-oriented processor for control applications. It is called the integrated controller-sequencer (ICS) and is designed for operations like logical sequencing, timing and controlling functions which require simple decision making.

The chip has been deliberately designed with these types of nperation in mind, rather than computational nperatinns, and ahouid prove eheaper and easier to program than general-purpose microprocessors.

The ICS has a microprocessor architecture and uses industry standard memory to store external programs of up to four Kbytes.

Advantagea claimed for the chip nver hard wired electromechanical and semiconductor logic networka include the uaual lowering of coat – in materiala and labour – and increased flexibility in programming devices.

It acceptа inputs from a variety of switch types, performs functions such as testing inputs, bit processing and simple arithmetic as well as logical evaluation and sequencing, nutputting instructions to actuators like aolenoids and valves, and to displays.

Applications seen for the chip include office equipment and time clock systema – along with automatic lawn aprinklers, car wash controls and psychedelic lights.

Cassettes for ZX81

THE range of program cassettes frnm Sinclair for its ZX81 microcompoter has been increased as part of a major planned expansion of the ZX81 aoftware range. Seven games and businеas cassettes with programs doveloped by software house Psion are now available through mail order and from high street atockist W. H. Smith, which placed an initial order of 30,000.

The programs use machine code to exploit the maximum capacity of the ZX81 and its add-on 16K RAM pack, says Sinclair. Two business applications are included: Vu-Calc to generate large tables for financial analysis, budget sheets and projections; and Vu-File for general purpose filing.

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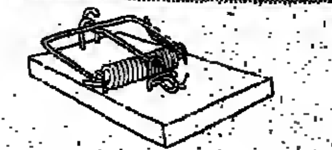

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COMPANY NEWS – 1

With the Computer Weekly First Time Financing Conference a week away, some basic guidelines on going it alone

How to set up in business – and still hang on to your home

HARFORD . . . Cash flow presents biggest problem for new companies.

THE risks and rewards of going it alone are substantial. If all goes well, particularly in the computer industry, you can find yourself a millionaire in no time flat. If it goes wrong, you can lose the shirt off your back and the home you live in – and you can find your income for years ahead severely limited by debt repayments.

While not intending to encourage or discourage entrepreneurs, here are a few basic guidelines on making the most of success if it comes your way, and to help limit the damage if it does not.

Starting your own company: First thoughts

There are many kinds of entrepreneurs in this country. But most people set out on their own for one of three reasons:

- To exploit an opportunity;
- To achieve independence and power;
- To make money.

Do not attempt to work out which one of the three you are – the majority of successful entrepreneurs are a mixture of all three.

Most successful entrepreneurs are able to conceive their objectives clearly, plan flexibly to achieve them, and are sufficiently determined to be able to overcome obstacles and failures on the way.

To put it bluntly, most of the really successful people are single-minded, unscrupulous to the front door of dishonesty and ruthless to a degree. So too, unfortunately, are many of the failures.

A final thought before plunging into the depths of *how* to do it, rather than the *why* . . . Have you thought about selling?

Selling is the fundamental function in any business – as opposed to money, which can be thought of as an element of the business. You cannot operate in business without at least making your income equal your costs, and you can only do that by selling your product or service – no matter how indirectly.

So, how do you go about it?

Sole trader or limited company

These are the usual two choices offered to people starting out on their own, but there is something much more fundamental.

First of all, separate your personal assets from your business operations. There is nothing quite so painful and complicated as losing your company, your job, your home, and finally going bankrupt to boot. If you take out a loan somewhere along the road, you may have to offer your home as security – but there are ways of avoiding this and we will come to them later.

The simplest way to separate your loved ones and your home from the hazards of business is to put your home in your husband's or wife's name, or into a trust, and incorporate your operation into a limited company.

Administratively it is probably simpler to operate as a sole trader initially, but all sorts of snags arise if your business grows, and you are more vulnerable if it goes wrong. If you choose this way of doing business you should consult an accountant.

A limited company: Some basic hints

Most people do business in the form of a limited company. It is easier to trade with other companies, who may query your tax status if you are a sole trader and who will refuse to trade until they are sure they incur no liability. While the initial administration may be slightly complicated, it is easy to operate when you become big enough to hire an administrator. Besides, The Great Intergalactic Software Corporation Ltd looks more impressive than Joe Bloggs, Sole Trader – some people might even think you are some kind of fish merchant.

The easiest way to set up a limited company is to buy one ready-made. Companies providing this service advertise regularly in the Financial Times, and seldom charge much over £100. If you are in a hurry, you may have to settle for the name your limited company is registered with. You do get a choice, but don't look for inspired titles.

Changing the name of your company costs about £42, but you may confuse customers if you do, and you have to set up an extraordinary general meeting.

Every company has to have a registered office, but be careful about using your home. Almost certainly you will be breaking local planning laws, and if you hang the name outside, as you are required to do, you may find the neighbours objecting. Many solicitors and companies in London and other big cities will allow you to use their office as your registered office.

There are a series of books relating to the legal existence of the company – such as minutes book, share certificates, and a variety of forms. These can be obtained from the firms who sell ready-made companies. Once obtained, they should be turned over to your accountant or solicitors.

A company has to have one director and a company secretary – as well as shareholders. The obvious thing is appoint yourself managing director and your hus-

● Turn to page 11

Starting out alone? Just started a company? Need money?

Getting the right sort of financing for your own company is crucial. Without it a computer supplier, distributor or software house could be a potential world-beater but still flop.

Computer Weekly and Barclays Bank have teamed up to organise a one day conference which will explain how computer industry entrepreneurs can raise money for themselves and their companies.

Speakers will include senior figures from Barclays, from finance institutions and from computer companies which have already been through the experience of raising cash and succeeded. Return the coupon below to book your place and learn from them.

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Kensington Close Hotel, Wrights Lane London W8

Thursday, June 17th, 1982

jointly sponsored by Computer Weekly and BARCLAYS

Chairman: Sir Frederick Wood, Chairman of British Technology Group

0830	Registration of delegates
0900	Opening remarks John MacGregor MP, Parli Under Secretary of State for Industry
0915	Keynote: some basic definitions of the sources and kinds of finance Sir Frederick Wood
0945	The role of the clearing bank John Sanders, Manager, Barclays Bank plc, Oxford Street Branch
1015	Questions
10.30	Coffee
1100	Non banking finance: venture capital Geoff Taylor, General Manager FFI Group John Robertshow, Director, United Computers & Technology Trust how to get backing from the government Dr John Parkes, Senior Principal Scientific Officer, Dept of Industry
1200	Questions and panel Speakers from morning
1230	Lunch
1400	Business Plan: what to prepare and how to present it Ian Lovett, Manager, Corporate Business Department, Barclays Bank plc Kevin Cahill, Associate Editor, Computer Weekly
1430	Raising the money: experiences of two computer companies Eddie Bleasdale, Managing Director, Bleasdale Computer Systems Ltd Naomi Langford Wood, Joint Managing Director, PME Ltd
1530	Tea
1600	Cash Flow: how to survive and grow up Ron Weedon, Managing Director, Keen Computers Ltd
1625	Questions and discussion: bridging the gap between computer companies and financiers Led by Frank Sumner, Professor of Computing Science, Manchester University
1715	Close

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The fee is £65 plus 15% VAT (£9.75) per delegate. INVOICE WILL BE SENT. The fee includes morning coffee, lunch, afternoon tea and documentation.

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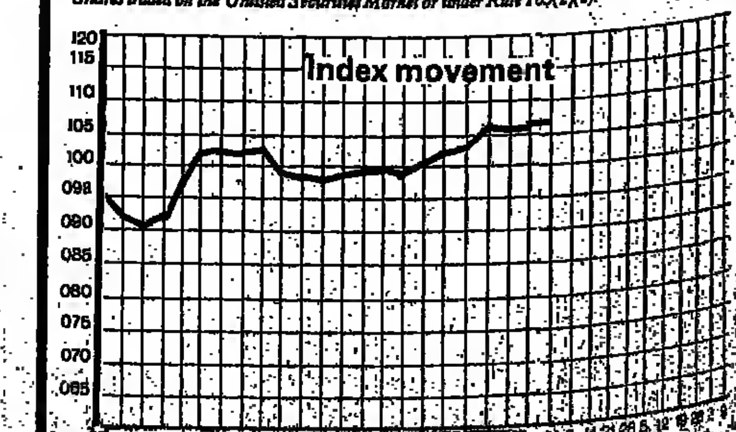
Date 4/6/82 Index 107.27 Change

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Pence Price	Pence C'nge	$ 1982 High	$ 1982 Low	US Stock	$ Price	$ C'nge
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in this table. Highs and Lows have been adjusted where necessary.

*Shares traded on the Unlisted Securities Market or under Rule 163(2)(e).



COMPANY NEWS – 2

by Kevin Cahill

Starting your own firm – with the minimum of risks

● From page 10

band or wife the secretary. But it may not be the wisest thing to do. Directors are restricted in what they can do, and to avoid confusion, since the secretary does the work, it may be best in the early stages to take that job yourself.

Legally you do not have to be a director to be the managing director of a company.

The minimum legal number of shareholders in a company is one, and the minimum paid up capital is £1.

It is not your accountant's job to run your business, but to ensure that your running of it is to the best possible financial advantage. Neither is it your solicitor's job to advise on business strategy or tactics. That's your job. Your solicitor simply ensures that your strategy and tactics are legal.

Your accountant should also be able to act as your auditor, which limited companies are required to have by law.

Around the time you are deciding how to legally set yourself up, you should have made an outline business plan. Here we come back to the selling bit. All the functions of business can be boiled down to three simple items as shown in Figure 1.

The marketing element can be introduced anywhere into the process, but you or your company will only make money when something is transferred to someone else for at least as much, and preferably more, than it cost to acquire or produce.

Set some objectives or goals. And don't confuse objectives with tactics.

Selling £1 million worth of Intergalactics Integrated Technology in year one is an objective.

Writing an Intergalactic Integrated Technology package and finding 20 dealers to sell it are tactics (or strategy).

However, if the real objective is to make a million in profit, selling 200 Intergalactic Integrated Technology packages is a tactic with which to achieve that goal. So, decide what your goals are. Once you've done that, the subsequent necessities, such as sales volume, margins, costs and so on, become easy to determine.

There should be little subsequent difficulty in determining what kind of margin can be made after costs, and how many packages have to be sold to make the magic million.

If you are selling the product yourself, you must decide who is going to manufacture the package. If the answer to that is you, then you must consider whether you really have the time to sell and still handle the acquisition phase administration.

From a simple sketch plan, your goals can be related to the resources needed to realise them. Having established the resources you need, you can then assemble them in the best tactical order to meet the marketing strategy needed to achieve the goal.

The government's place in your scheme of things.

While it is useful to recognise that the government is out to tax as highly as possible every penny of profit you make, it is also wise to recognise the "game" element in the play. Both income tax inspectors and VAT inspectors are generally helpful, especially if you go to them before allowing your problem – whether it is inefficient bookkeeping or overseas invoices – to become even a shade illegal.

Inspectors are usually wisely tolerant of the genuine mistakes of the many amateurs found among small companies.

VAT

Value Added Tax is a tax on sales turnover: If your little company issues an invoice for £100, and your total yearly turnover comes to over £17,000, you must charge 15% VAT, or £15 on that invoice. At the end of every quarter you must total up your VAT and, using a special form, pay your VAT to the Inland Revenue.

You will be back assessed if your turnover exceeds £17,000 even though you didn't expect it to, and it is illegal to start up another company half way through a period just to avoid VAT.

When you register for VAT, you will be liable for a VAT inspection, which usually takes place in your first year of trading.

Most of your suppliers will charge you VAT. When you come to tot up your quarterly VAT liability, you can also add up the VAT you have been charged, and deduct it. Even if you are supplying only three small business systems a year, for say £4,945 in end-user value, you will have charged your customers VAT of £1,935, which is retained on your books.

If you register for VAT, you can deduct the VAT on your supplies, stationery, telephone bill, petrol and on any other VAT invoices you had, and you might get a result something like that in Figure 2.

You have effectively reduced your direct costs by £1,095, for the sake of some very simple administration.

Incoming VAT bills only need to be logged and filed. You also have the use of the VAT you are paid until the end of your VAT accounting period, although many people find it best to keep VAT payments in a separate deposit account.

If your customers are slow payers, you will need to keep a close watch on the build-up of VAT liabilities on invoices you have issued, but which have not been paid. You could find yourself paying out excessive amounts of cash to the Customs and Excise, which you have not received.

Tax and PAYE

You are liable, at least theoretically, for two forms of basic tax as a small company. You are liable for corporation tax at a rate of 52% on your profits.

You are also liable to pay income tax, NIS and other payments to the Inland Revenue on any salary or payments you make to yourself or others, as directors or employees.

Once you move to PAYE and NIS payments, you are undertaking a substantial amount of periodic and annual form-filling and record keeping. To avoid the administrative burden until your company can afford to pay regular salaries, and can afford the overheads involved, the following scheme has certain advantages:

When you are drawing up your business plans, particularly your cash flow and cost estimates, you will have plugged in a sum for your own salary, or directors' fees.

You may, at the same time, have either decided to borrow money to finance the company, or to have put up the money yourself in the way of a subscription for shares.

Instead of buying shares, or putting all the money straight into the company, you should consider taking part of the loan on your own behalf, equivalent to your salary for, say, two years, then lending that sum to the company.

You then draw that money as limited loan repayments, but without either crucifying your cash flow or damaging the company chances of success by getting working directors involved in unpaid administration.

The penalties for failing to think through the consequences of taxation are substantial.

Pension funds

From a small company point of view, there are two important points about pensions funds.

They are chargeable against tax, and certain recent pension schemes allow for reinvestment in the paying company. Using the zem administration scheme, there may be difficulties, but the zem plan is only intended as a measure to help in the first year or so.

Your accountant will advise on both pension funds and the applicability of the zem administration plan to your own situation.

First days on the road

At this point you discover that you need some money, beyond your own resources, to finance the company until you are into profit.

There are two basic forms of money which can be used to accomplish this task for you.

There is a loan usually obtained from a bank and repayable (with one exception, Barclays Business Start-up Loan) at regular intervals inclusive of capital and interest.

And there is equity capital, paid in return for shares. The normal repayments expected are in the form of annual dividend payments, made from any profit the company makes.

Beware of cumulative preference shares. It is a loan in disguise. An example, of what a loan can cost, and the effect it would have on cash is as shown in Figure 3.

The loan has made operating cash flow woefully thin. The fact that much of the capital of the loan may be in a deposit account, earning interest and available to plug the gap, should not disguise the impact of a big loan on a net trading margin of 20%.

The same kind of figures, but based on an equity injection of £50,000, might look like Figure 4.

For a company which is primarily selling a service, say systems analyst skills, which has very few overheads and very little deductable VAT, and which is facing maximum tax exposure, a possible approach to cash conservation might as shown in Figure 5.

When looking at your business plan, remember the key area is cash flow. The plan should also include:

- Good knowledge of basic markets;
- Details of existing customers;
- Cash flow statement;
- The management team;
- Plans of what the company is going to do;
- Details of products;

Go back to Figure 3. Taking the theoretical maximum of tax charge (52%) on your profit of £14,600, ie £7,592, you wind up in the red to the tune of £3,092. Your cash flow is so poor, mostly as a result of your big loan, that your revenues will not cover taxes.

Figure 6 says most of what needs to be said on cash flow. As Sir Timothy Harford, managing director of Singer & Friedlander pointed out at last year's conference, far more companies go to the wall because their cash dries up then go bust because of making a loss.

The First Time Financing Conference, jointly sponsored by Computer Weekly and Barclays Bank will be held at the Kensington Close Hotel, London on June 17. Details from Sue Bonnell of IPC Conferences on 01-643 8040, or fill in the coupon on page 10.

Acquisition of a resource or skill	→	Storing or processing the resource or skill	→	Selling the resource or skill as a product
Raw material	→	Manufacture	→	Market

Figure 1

	Turnover	£12,900
	VAT due	1,935
LESS	VAT paid on petrol	115
	VAT paid on phone	60
	VAT paid on stationery	20
	VAT paid on microhardware	900
	TOTAL	1,095
	NET VAT PAYABLE	840

Figure 2.

	Quarter 1 £	Quarter 2 £	Quarter 3 £	Quarter 4 £
Revenue	25,000	25,000	30,000	30,000
Costs	20,000	20,000	24,000	24,000
Cash/profit	5,000	5,000	6,000	6,000
Interest and Capital on £50,000 loan over 5 years at 16%	2,000	1,900	1,800	1,700
	2,500	2,500	2,500	2,500
Net cash	500	600	1,700	1,700
			CASH for year	£4,500
Theoretical annual profit (trading profit minus interest)				£14,600

Figure 3.

	Quarter 1 £	Quarter 2 £	Quarter 3 £	Quarter 4 £
Revenue	25,000	25,000	30,000	30,000
Costs	20,000	20,000	24,000	24,000
Cash/profit	5,000	5,000	6,000	6,000
+ Interest on cash deposit	1,187	1,187	1,187	1,187
Theoretical profit	6,187	6,187	7,187	7,187
			Cash	26,748
			Annual theoretical profit	26,748

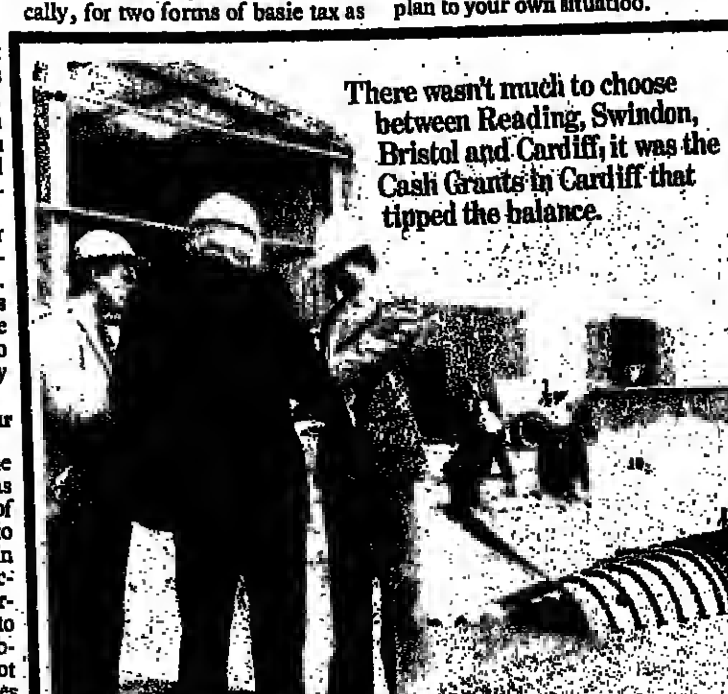
Figure 4.

	£
Three directors, each charged as contractors:	15,000
Lent to company £5,000 each and repaid monthly	(15,000)
	.00
Income from contracts	60,000
VAT payable	9,000
Misc. costs	4,000
Theoretical profit	56,000
Theoretical tax at 52%	29,120
Profit	26,880
BUT:	
Three commercial vans purchased for travel (on HP)	15,300
and taken at full first year allowance value	VAT (2,295)
Purchase of small business system taken at full 1st year allowance value	VAT (315)
	2,100
Recalculate theoretical profit	38,600
Recalculate tax at 52%	20,072
Recalculate VAT payable to Inland Revenue	6,390

Figure 5.

	1981/82 £
Turnover	20,000
Costs	15,000
Net cash and trading profit	5,000
Take full first year allowance on transit van and Apple II both on HP	7,200
Net loss	2,200
But cash on hand	5,000
Tax liability nil	–

Figure 6.



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*Average Compound Annual Rental Growth rates of industrial/warehouse units over last ten years (Source King & Co [illegible] survey)

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Software firms learn to lure impulse buyers

by Maggie McLening

AS chains of microcomputer shops mushroom in high streets, software houses are realising the importance of the packaging of their products.

The browsing shopper is unlikely to be attracted by a protective piece of cardboard wrapped round a floppy disc, shoved into a plastic bag with a flimsy list of instructions, neither will it inspire the customer to buy the real thing instead of a cheaper pirated copy of the software.

Off-the-shelf software calls for supermarket-style packaging techniques, which have already largely been adopted in the US. There is also the need to make the products appear substantial and therefore, by insinuation, bug-free.

"As there are more and more products available, increased product perception means that packaging must get more important for the high-volume markets," said Stuart Lang, a founder and managing director of Micro Focus.

A specialist in system software, particularly CIS Cobol, Micro Focus is now reassessing its packaging, and looking at the possibility of introducing colour into its manuals. "We want the user to feel warm and comfortable with them," explained Lang.

One of the more recently-formed companies that has already won acclaim for the quality of its documentation and presentation is Caxton Software Publishing.

"We aim to give substance to the fact that the whole product, including the software part of it, is a quality product, and to inspire pride of ownership in the purchaser," said Bill Barrow, a director of Caxton.

He added that he feels it is important to have the disc(s), tutorial and reference manuals, and reference cards, if any, in one box, so that they can be taken away as a total pack.

Caxton allows approximately 10% of the overall selling price of a product to cover packaging and promotion, although it would be less for very inexpensive items.

Comshare is fast making a name for its colourful packaging. The London bureau puts the packaging price at around £25 for a piece of software selling for £400, down to £5 for a £30 product. Its attitude to the subject is totally different from that of Caxton.

"I don't think micro software is a very earnest area, because the quality of the product doesn't usually live up to the image. A lot depends on the size of the company: the American end of Comshare is fairly small, so it goes for an up-market, conservative image, while we go for a bright and breezy approach. We're a bit bigger, so we can afford to let our hair down," says Nigel Pendse, financial products marketing manager.

Letting its hair down has resulted in some imaginative projects, such as the commissioning of young, unknown artists to produce designs incorporating the Comshare "bead" logo.

One experiment, red plastic briefcases to contain the Fastplan financial planning system, led to complaints from dealers that customers felt silly carrying the garish items. The briefcases may shortly be discontinued, not for aesthetic reasons but because of practical problems regarding size, according to Pendse.

"The problem is that the snappy little versions will only hold 5¼in discs, and the ones that can take an 8in disc are too large to fit into most people's briefcases," explained Pendse.

Optimiser, the first offering from Caxton Software Publishing.

SOFTWARE BRIEF

Schools' 'write your own' contest

A SCHOOL software competition has been launched by Prism Programs, jointly sponsored by Hutchinson Education and Transam Computers. Open to primary and secondary school teachers, the competition is for the best educational program for use in any subject up to A-level. Programs for most machines are acceptable, and cash prizes ranging from £500 (first) down to £100 will be offered. Closing date is July 1, and entry forms are obtainable from Bob Osborne, Prism Programs, 17 Conway Street, London W1P 6JD.

Osborne comms

RESPONDING to the plea for more software for the Osborne 1 portable microcomputer, Link Micro Computers has announced a communications package to allow the machine to be used as an intelligent terminal to a remote mini, mainframe or any other micro. Priced at £100, Comm includes a built-in editor and automatic error detection with manual retry.

Total retrieval

MINICOMPUTER system manufacturer Gould SEL, a subsidiary of Gould Inc in Chicago, has introduced an English language query facility to work in conjunction with the Total database manager. Called T-Ask, it is a non-procedural information retrieval language which allows online interactive interrogation of the database for ad hoc enquiries.

Debt accounting

SPECIALIST in legal and medical software Automatic Information Management (AIM) has added a debt accounting package, Debtcharter, to its Charter range of legal systems. Currently available on ICL System 10, and shortly on Digico equipment, Debtcharter keeps track of the solicitor's charges, money owed to the client by debtors, and disbursements on his behalf.

Range for R-range

A COMPREHENSIVE range of software packages for Redifusion R800 and R1800 series minicomputers has been released by John Lane Systems of Petersfield, Hampshire, part of the John Lane Group. Costing between £1,500 and £3,500, products available include financial ledgers, time recording, word and text processing, mailing, and a report generator which JLS believes to be unique to the Redifusion R-range of equipment.

Fixed assets

TWO leading photographic companies, Agfa Gevaert and Durst, have bought the IBM System 38 version of the Sapphire fixed assets package developed by Pentagram Software Products of Amersham.

For car dealers

A MINICOMPUTER system for motor dealers is now available from MAI, for running on its full range of machines. Offering full word processing facilities, Deal handles new and used vehicle sales, workshop, spare parts and accounting.

Brokers' system

A REAL time commodity and foreign exchange system has been announced by Peter Lewis, a specialist consultant, for running on Datapoint minicomputers. Shortly to be installed at commodity brokers Rudolf Wolff & Co, Adaptable Currency Commodity Real-Time Datapoint (ACCORD) covers world markets on a monthly or daily basis, and caters for up to 10 companies using the same market and client base simultaneously.

Upgrade route from P&O

LENGTHY machine-to-machine conversion projects are guaranteed to produce bored, resentful programmers.

An alternative is now being offered by the Rickmansworth-based bureau division of P & O Computer Services in the form of a program development and conversion facility for companies migrating or upgrading to an IBM 4341.

Using the P & O Remote Terminal Service (Ports), which runs under VMSP using CMS and DOS, the user has online access to the bureau's IBM 4341 while still running his existing configuration. The converted system is ready to be loaded on to the new machine as soon as it arrives, says P & O.

The customer provides a magnetic tape of files or programs, which may be written in Cobol, Assembler, Basic, Fortran, PL/I or RPG II, to be loaded into the host machine. Programs from Univac or lower range IBM machines are very similar to those on the IBM 4341, so that programmers may be able to convert them by straightforward text editing, but a range of conversion aids are available for those from an ICL environment.

No shortage with Sirius

PROPHETS of doom who predicted a shortage of software for the ACT Sirius 1 16-bit microcomputer seem to have quietly disappeared.

Birmingham-based Applied Computer Techniques (ACT), the UK distributor for Sirius, catered for the possible shortage by sending programmers out to California to work alongside the hardware engineers, so that a range of business software would be readily available.

Software house Compact Accounting of Dorking also provided financial packages and a program generator through distributor Zenithplan, while Graphical Software, based in Cambridge, has now announced the C-RTS multi-user operating system, an alternative to Unix, as well as MS-DOS and CP/M-86.

Although Graphical Software concedes that it may eventually have to add a CP/M-86 interface to C-RTS, it claims that C-RTS beats Unix in two known weak areas: price and user-friendliness.

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SEE YOU AT THE WORLD COMPUTER SERVICES CONFERENCE, COPENHAGEN, 21-23 JUNE 1982.

Instead of a bureau, why not hire an outside firm to run the whole installation?

by Andrew Thomas

IN a time of recession, one of the areas that companies subject to close scrutiny is data processing. The DP budget is a major item on the corporate balance sheet, and many firms are seriously looking for an alternative to an in-house installation.

An obvious if extreme step to take is a complete shutdown of the computer department and the transfer of the workload to a bureau. But apart from the large number of redundancies caused by such an action, there is also an effective loss of control.

It is extremely unlikely that there will be a bureau located just down the road, and deliveries of output from batch systems will always be that much slower than was the case with an in-house machine. Debatching, decollating and delivery of output has always accounted for the largest proportion of time in the cycle of a batch system. Time on the machine typically takes less than five per cent of the turnround time.

Another alternative becoming popular, particularly with small companies, is a shared data centre, which serves several companies' needs. With costs divided between them, the operational costs are greatly reduced, yet the members of the co-operative still maintain the personal contact with the operations and systems staff which is often lost when moving to a bureau environment.

But there is a third option for the company looking to reduce its overheads, which falls somewhere between these two extremes. When it is decided that an in-house computer has become an expensive luxury, firms can hand over their entire DP department – hardware, operators and systems staff – to an outside company which will then run outside the installation.

The traumatic handover of work from an in-house machine to either a shared installation of a bureau is avoided. The workload continues to run on the same machine with the same staff.

Handing over computers to be managed by another company first became an option in the late 1960s, when the Hoskyns group started its facilities management service. Since then, over 60 firms have had their computers taken over by Hoskyns, ranging from banking and local government to manufacturing and stockbroking.

Obviously, running 60 machines is impractical owing to the large amount of spare capacity spread across them. What Hoskyns has done is to set up a central core of three major data centres, with the facilities management sites linked to them.

Hoskyns currently has nine satellite data centres linked to the main three at Trafford Park in Manchester, Gravelly Park in Birmingham, and Regent's Park in London. The total workload is constantly assessed, and there are often surplus machines of one particular architecture.

When this happens, the workload of one or more of the satellite centres is transferred to a central installation, the hardware and staff being redeployed elsewhere in the Hoskyns network. Not only are jobs made more secure when a facilities management deal is signed, but the prospects for working on different manufacturers' kit and travelling to different installations are enhanced.

A further benefit to the user who decides on facilities management is that of resilience in the face of disaster. With the spread of hardware around the UK, Hoskyns can quickly move critical work between data centres, assuring the client of virtually uninterrupted service.

Alex Lander, the man responsible for the running of Hoskyns' facilities management deals, says that he has resisted the temptation to go over entirely to one manufacturer's hardware. The company's facilities are split roughly 50/50 between ICL and IBM.

"We don't want all our eggs in one manufacturer's basket," he says.

The Regent's Park centre, converted from a warehouse last year at a cost of £300,000, currently houses a 4341 and a 370/148 from IBM, and a 1903T and a 2904 from ICL. Another 3T is currently in use at the Smith's Industries site in Cricklewood – a recent deal – along with a 1904S.

Dave Waroe, manager of the Regent's Park centre says that the 4S is likely to be moving in to the central site soon, enabling one or more of the smaller machines to be disposed of. Two separate shift systems are in operation at Regent's Park – three-shift with four shift leaders for the IBM machines (one shift leader is responsible for training), plus 17 ops, and a two-shift system for the ICL machines, each with two and a half operators.

Cricklewood currently has five on a shift, but numbers will swell when the ex-Smith's machine is moved in. In accordance with modern trends, no shift allowance is paid. There are 19 users of the IBM machines, and nine of the centrally-located ICLs. A further dozen ICL customers are served from the Cricklewood centre.

Maintenance is handled by the manufacturer's own engineers. Both Warne and Lander expressed the view that this is still preferable to the use of third party contractors. Warne also pointed out the difference between ICL and IBM engineers:

"IBM engineers tend to be bright young things, while ICL seems to use mostly older, jovial types." I will not comment.

Warne favours IBM hardware, citing the number of goodies available, such as colour consoles and terminals, but says that ICL's operating systems leave IBM's standing.

A development of facilities management, aimed at firms contemplating a move to new hardware, covers either the move from one generation of machine to another, or to a different manufacturer.

When taking into consideration the average time which elapses between major hardware upgrades (around the five-year mark), and the usual length of stay in one company of ops and programmers (three years), it can be seen that any expertise gained in an upgrade done in 1980 will probably have left the company before the next one is due.

Thus most firms are singularly unprepared for a painless transition to new hardware. Companies such as Hoskyns, on the other hand, are frequently transferring workloads and moving machines from one location to another as they take on more facilities management deals and rationalise their computer resources.

The Hoskyns service, known as Crossroads, differs from normal facilities management in that the complete takeover of the client's computer department only lasts for the duration of the problem period between the rundown of the old service and the stabilisation of its successor.

Dave Warne watches his favourite hardware being operated by Phil McGoldrick.

If it shocks you, it'll horrify your hardware

ANYONE who has worked with computers for any length of time, or any electronic device for that matter, will have experienced many static shocks from the hardware. To be more exact, it is the hardware which receives the shock from the humans, their personal static charge being earthed through the equipment.

Walking on nylon carpets and wearing non-conductive shoes both contribute to static build-up, but the discharge rarely causes operators much concern beyond the initial discomfort and the choice of which expletive to use.

Computers, however, tend to be much more afraid of static electricity, and with good reason. The sudden appearance of several kilovolts at one side of an integrated circuit usually results in deep-fried chips.

At one site where I worked, the paper tape reader (yes, this was some time ago) tended to charge up the paper tape as it went through the read station at great speed.

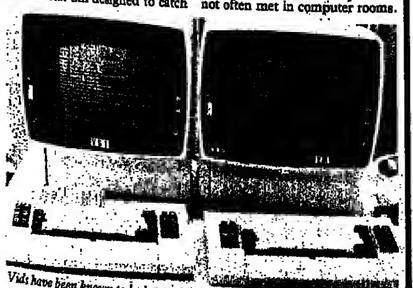
The charge would then build up in the metal bin designed to catch the tape, and when sufficient voltage had accumulated, it would discharge back through the reader. Although the reader itself was earthed, the static would follow the earthing system to the drum used to store the operating system.

The shock of this event proved too much for the system to bear, and there were many extra tea-breaks while the system was being reloaded.

The simple expedient of earthing the tape reader's bin cured the problem and brought the unscheduled interruptions to an end.

The other static-related problem I have encountered has been the "sitting down at a VDU and OUCH! . . . oh rats, the thing's gone into send" situation. This usually only causes an annoying delay after logging in as the terminal moves its cursor across the entire screen in a vain attempt to find the commands that you haven't had a chance to type in yet, although vids have been known to be lost to the system as a result.

Think yourselves lucky that volatile and flammable liquids are not often met in computer rooms.



Vids have been known to be lost to the system.

A report from the health and Safety Executive* on the hazards of static build-up cites the following example:

"In a typical incident an operator was in the process of loading an earthed 900-litre mixing vessel. After he had added 175 Kg of toluene, he started to add epoxy resin in 25-Kg lots from paper sacks. He had emptied three sacks into the aperture in the top of the vessel, and as he looked inside it, there was a discharge from him which ignited the vapour in the vessel.

"The subsequent investigation showed that he was wearing insulating rubber-soled shoes and that the floor was covered with a thick layer of insulating resin deposits."

The report does not actually say that all that was found of the operator was his shoes, but I'd be careful with the isopropyl alcohol in future if I were you.

* Electrostatic Ignition Hazards of Insulating Materials. HMSO, 49 High Holborn, London, London WC1V 6HB. £1.50.

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SYSTEMS THOUGHTS

Body language of the interview room

Anne Leeming lectures at the Centre for Business Systems Analysis at City University. She is also a consultant on microcomputer systems.

WHEN it comes to looking at existing information systems prior to designing a new one, the systems analyst has many fact-finding techniques available. One of the most popular and frequently used is the interview.

It does offer a fast method of getting answers to particular questions, as well as being the only way to determine some information.

Professional analysts carefully arrange their interviews, making sure that the intorviewee is correctly approached and that appointed times are adhered to. The analyst will prepare a list of the information required from the interview; however, a very important part of the interviewer's job, in this context as in any other, is to listen to what tbo person being interviewed has to say about the topics under discussion and their environment.

Tbe main purpose of the interview may be to obtain specific information, but another equally important objective is to establish a good relationship with the people being interviewed. This is vital to the sucessful design of tho new system and especially to its implementation.

So, an interview should lead to the analyst receiving some specific information and, in addition, some information about the interviewee. Tho spocific information can sometimes be verified by observation or by consulting recorda or other methods.

Here we observe an illustration of systems theory: the prepared topics of the analyst can be viewed as input to the interview, the information obtained, both direct and indirect, can be viewed as the systems output, the processing can be seen as the interaction between the two people in the interview, with each monitoring the other's perception of the information transfer to check that correct understanding has been reached.

Later verification of any quantities is a form of error control. The physical environment and the organisational context of the interview can be recorded and inspected.

‘In an interview the attitude of both parties can have an enormous effect on the information transmitted’

Closer examination of the processing shows us that there is more than one form of information transfer between the two people. There is the verbal information and, with it, a whole host of messages often referred to as "body language".

It is a well known fact that, in an interview, the attitude of both parties can have an enormous effect on the information transmitted. A large aggressive person interviewing a shy junior may get very different information than if the interview had been conducted by a smaller, very friendly person.

A quick look at TV interviews will supply plenty of other examples.

The analyst does not yet have any formal techniques for recording such body language. It can introduce bias into the information transferred. An experienced analyst will recognise the bias when it occurs and consider it when interpreting the results of the interview. But the full extent of the effect of bias on the interview is not known with any sort of accuracy so it is difficult to know how much allowance to make.

Wo have quite a problem here; is it possible or desirable for an analyst to so control or tailor his interviewing techniques that his attitudes will have no effect on tho intorviewee? Alternatively, is it possible to develop some method of recording "body language" so that all the information being transmitted in an interview can be assessed and evaluated? A middle way might be to train interviewers to at least recognise such problems.

After all we can't all be like Sir Robin!

Anne Leeming

HUMAN TOUCH

Filing your papers can be a bind

Cliff Dilloway is an independent consultant specialising in accounting software, taxation and payroll.

THE youngsters at school find a need to organise their papers in what they call a file. The word has a more precious meaning in computing and so the utilitarian term ring binder comes to be used in later life. And it's not just the term, but the binders themselves, that grow as row on row come to accommodate the manuals intended to contain the answers to every sickness that ever invaded a system.

The distribution of manuals in ring binders brings its own disease. The rings on binders that have been through the post never seem to close properly again. As the pages are turned the leaves come off the rings and half the value of using binders is lost.

It's no good attaching your infuriation to the Post Office. Their system is for bulk handling over distances and they have always made it clear that packages should be properly packed.

What can be done? It's not sufficient to rely on a padded bag. The padding will absorb shocks when the bag is manhandled, but not weight if your binder is at the bottom of the pile. A rigid container is called for that will enable the ring binder to travel in its own little protected environment. If a heavy weight of paper is already on the rings then tho pages should be retained to avoid deceleration forces deflecting the rings after a short flight through space in tbe sorting process.

An alternative strategy is to use a heavier quality mechanism in the binder. A light and consequently chesper mechanism may be quite adequate on the shelf and for reference but heavier quality mechanisms are available. Tbe binder manufacturers usually buy in the mechaniams and make up to order, so if transit is among your requirements then so sbould be a stronger mechanism.

In the same vein a mechanism with a wider base should be able to stand the shocks of transit, but again thoy cost more. Without much evidence to back it up, the rectangular style of ring is believed to be stronger than others. Certainly this style of ring will more readily accept masking tape ovor the join to permit tho two halves of the ring to share the shocks of the journey.

One form of protection that I can recall seeing but have not been able to track down commercially is a purpose-made polystyrene former. Fitting inside the binder and over the rings the former holds everything tightly in place and absorbs the load and shocks.

Those who need to distribute their manuals by mail should see the advantages of binders reaching their customers in a usable condition and a simplo solution to that problem is what is needed.

Cliff Dilloway

FOCUS

Candidates for job burn-out

WHILE the DP team have their collective heads down producing user friendly systems, their own jobs could be growing unfriendly. A US report suggests that job burn-out symptoms are frequently being identified among DP teams, the only known remedies being rest, relaxation, and change of job.

The epidemic is not necessarily limited to DP personnel, at least in the UK. High on the job burn-out casualty list could be Minister Kenneth Baker and his IT Year awareness team, the director of the NCC, David Fairbairn, through his attempts to organise and regulate software product schemes, the BCS leader in condemning the government privacy proposals, the ICL management in trying to keep pace with their energetic leader and the IBM Personal Computer salesman trying to keep pace with demand.

It is possible that the authorities have already made some contingency plans for the burnt-out DP man. An IT exhibition at the London Science Museum has just opened. Alongside the British Leyland computing systems featured, some prime example of burnt-out DP managers could be displayed.

●

Certainly there should be no lack of supporting equipment at the show. According to a useful publication from the PCML Group, current printer ranges can operate at speeds approaching 20,000 lpm — a speed whicb should guarantee rapid machine and paper burn-out, if not burn-up.

The company also tackles the problems of tape streaming systems. With transfer rates exceeding 90 Kbyte/sec, the tape would not only be in overdrive in streaming mode, but showing signs of steaming, and easily qualify for a place on the IT DP burn-out stand.

The burn-out symptoms are reportedly various and insidious but most involve a loss of energy and working enthusiasm. With reports that over 50% of the US data centre workforce are already afflicted by the complaint, it can only be a matter of time before the pestilence spreads across to UK installations, with the probable exception of State and banking DP centres where stress and strain attitudes are seldom present.

●

Many industry observers would already claim that job burn-out is hardly likely to affect most levels of DP personnel, who in the main suffer from job boredom, job frustration and general job dissatisfaction. Job stress, however, does not seem to be a listed factor for those involved in changing jobs.

A review undertaken by the Californian State Polytechnic found that DP personnel moved jobs because of existing limited opportunities, obsolescent procedures and facilities, non-existent career and promotion paths, and general frustration in getting over-ambitious projects off the ground.

Closer to home, reasons for leaving tend to be rather more practical. Quitting for more money probably leads the field, closely followed by job exhaustion — the task rather than the individual. Plus a strong suspicion that job hunters stand a better chance if their track record reveals that they have moved around the industry at regular intervals.

In fact job hunting itself could be a contributory cause for job burn-out fatalities. Having to fill in unco-ordinated and badly structured job application forms, each requiring differing facts and figures, could turn head-hunting into head-banging procedures.

Alan Simpson

DOWNTIME

Behind closed doors

ENGLISH seaside resorts have never been noted for air temperature much above 50 degrees Fahrenheit, a surfeit of sunshine, or providing a ready market for solar heating salesmen.

Eastbourne in May is no exception, and delegates at the ICL Computer Users' Association were therefore excused the painful decision whether to attend the presentations in the Victorian splendour of the Grand Hotel, or to placo knotted conference programmes on their heads and relax on the beach.

Thus ICL supremo Robb Wilmot was assured of a full house for his state-of-the-company address. The houso would have been even more full had not Europe's leading computer company decreed that Chad was persona non grata at Robb's presentation.

So, while tho assembled multitudes gaped in awe as Wimbledon's favourite son whipped through 61 overhead projector slides in 55 minutes, your humble reporter was forced to remain unwatched in the conference organiser's free bar.

The time was not wasted. Chad made two new friends – an ICL personal computer, and a bottle of White Horse whisky.

As if by magic, at the very moment when Wilmot finished his dissertation, the rain stopped, the grey clouds parted, and the sun streamed through the Grand's elegant windows.

If the man can make the sun shine in Eastbourne, ICL should have no trouble in ousting IBM from the World No 1 slot.

Priestel in action during the Pope's visit.

Cycling into the beyond

USERS of Starlink, tho computer network for astronomers, can claim expenses under certain conditions for travel to their nearest site. One of these conditions seema rather strange – the nearest site has to be outside cycling distance.

Since the rule does not make clear how far cycling distance is, I had better give you my guideline, based on the observation that practising Roman Catholics used to be excused having to attend Sunday Mass if their nearest church was beyond walking distance.

Holy Mother Church, however, went further than Starlink and decreed what walking distance is – a blistering three miles.

Now a comfortable cycling speed, assuming a mean gradiont up or down of one in 50, an average three-speed touring bike, and a clean bill of health, is 14 miles an hour.

A comfortable walking pace is 3½ miles an hour.

On this basis I issue Chad's decree: Starlink users may claim travelling expenses when their nearest site is more than 12 miles distant.

Holy wars erupt

A FORTNIGHT ago I told of Priestel, the viewdata service set up to warn the Pope that glaring at him from the side aisles of his public meetings would be the Reverend Ian Paisley.

I am glad to report that His Holiness heeded the warning. At an open air mass during his visit, the Pope was plagued by Paisley and his adherents howling "No Popery here!" and other blasphemies.

The Pope caught Paisley's eye, smiled and promptly blessed him with the sign of the Cross.

It is said that Paisley needed a bath in carbolic acid after that to exorcise the papal stain.

Whale of an image

I KNOW wo live in an age of lookalikes, but I was unaware that it had spread to the type of print used for company logos. Until yesterday that is, when I noticed the acrooym BIEN adopted by Electronic Services of Henley.

The odd thing about it is that the letters are printed with the same blue lines as IBM uses.

A careless glance at BIEN's publicity material, and you think you are reading literature from GBW (the Great Blue Whale).

GBW's swim in the ocean of informatioo technology is clearly aided by guidance from pilot fish like BIEN.

What an exhibition!

TEN score of men and women exposed their bodies in the centre of Hanover in a display of unparalleled naked aggression against an exhibition of electronic weapons. I for one was shocked that a display of inert gadgets could elicit such emotion.

But as often with protests, tho exhibition was only a catalyst. The aim was to secure tho release of four protesters arrosted at a previous demonstration.

Or perhaps the Germans were merely fulfilling the old Byzantine proverb: The fanatic redoubles his offort on forgetting the aim.

Chad

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, June 10, 1982

Technology for a civilised society

THE Pope has come and gone, the war in the Falklands lingers on. Information Technology Year has reached its halfway stage. At Versailles the Western world leaders met and President Mitterrand made a call for the industrialised nations to ensure that new technology is used to create, rather than destroy jobs.

We in the computer industry might be excused if we are confused about what is and is not important within tho bounds of our once cloistered world. The fact that the bounds have dramatically widened ovor tho past decade, largely as a result of the "microchip revolution", is probably the cause of much of the confusion. Computer Weekly has always identified itself with the mainstream of the computer industry, and will continue to do so. But the hyperbole which is attached to tho grander world of "information technology" threatens to blur the issues which are of most importance to us.

Not quite lost in the hoop-la which attends any summit of the "free world" leaders was the report by Mittorrand which considered the effects of new technology on omployment and the general well-being of the world. Among othor things he called for an immense training effort, and a more "civilised" use of technology. Clearly in Mittorrand's mind was the danger of an elite sector of society having a cornor on the knowledge of how to make technology work for us.

There have been moves in this country to tackle the problem of training in what Mitterrand and others havo called the "third industrial revolution". But while the Thatcher government has made much ado about its £1 billion New Training Initiative, tho sad fact is that the same government is overseeing an extraordinary ravaging of the educational system. The cuts in education budgets and with it the denial of university places to qualified school-leavers, will in another ten years' time rank as one of tho most short-sighted decisions of this government.

The government must bo made to understand that a nation which hopes to be at tho forefront of new technology needs a highly educated workforce. The guns or butter argument needs to be expanded into education.

Good relations

IT is all too easy for young high technology companies which are experiencing growth pains to overlook tho importance of good industrial relations practice. Tho computer industry, still largely unregulated and not heavily unionised, has used its ability to move quickly in tho marketplace to survive and grow. That has sometimes left good labour relations in the wake.

A dispute between Electronic Data Processing and its newly unionised staff points to the difficulties that can arise when companies do not clearly impress on thoir workforce that they, as woll as the company, will benefit from rapid adaptation to change. Companies which ignore labour relations provide rich territory for union recruitment activities.

Trade unions came into existence to counter-balance the power of large companies – companies which typically dominate stable markets, and can afford to be slower afoot in reacting to change. The trade unions' role in dealing with young, high growth companies needs to be carefully thought out.

It is all very well for the Association of Scientific, Technical and Managerial Staffs, which is representing the EDP staff in the dispute, to seek to "educate" the company in good industrial relations practice. But in the same breath that ASTMS national officer says that he only wants to make EDP understand the law as it applies to labour relations, ho adds that he regards recourse to the law as a "fallible back-up" to industrial action.

ASTMS regards the EDP case as a "significant dispute", and it clearly intends to turn its guns on smaller companies. One must question the rationale of using a canon to shoot a fly. EDP must look closely at its labour policies, but ASTMS must look at its own negotiating and disputes procedures to ensure that it has a balanced and effective method of dealing with small and nimble high technology companies.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by R. Cooper of Aldershot, Hants, who wins £5.

". . . but sewers may well soon be a thing of the past as micro chips take over much of the dirty work."

BBC Radio 4

LETTERS

Talk to councils in search for a site

AS a councillor in local government, your editorial (CW, May 20) struck home to me. I can appreciate your concern regarding planning authorities, but the fault does not rest entirely with us.

I, too, am concerned at the frustration that is being experienced by the computer industry, and offer the suggestion that firms talk to their local council about their problems; the officers are professionals and give willing advice when jobs and rateable value are at stake.

My own Council of Rochester-Upon-Medway City is desperate to attract industry into the area. I am sure that they would listen to any request for sites or land.

The Medway area stretches down the A2, straddling the River Medway: it is a port, has a small airport, is bounded by the M2 motorway, has good communication with Gatwick airport, and fast electric trains run to London and the South Coast.

Thorn, Marconi-Elliott, CAV-Lucas, Facit, and other science based firms are there. HM Dockyard is scheduled to close, throwing up an abundance of skilled labour, including electronic and computer personnel, who I am sure would rather stay in the area if there was work available.

Readers of Computer Weekly who are looking for an understanding council with sites or land available, please write to me and I will personally present your case to my council.

C. W. HAZELL
Councillor
Rochester-Upon-Medway City Council Offices
Frindsbury Hill
Strood, Rochester
Kent, ME2 4HR.

'Sponsor teacher re-training' appeal

PHILIP HUNTER'S article (Programmers Page, CW, May 13) on the CMG report and John Barnes' (SPL) reaction, seemed to reflect a number of half-truths. It seems clear that CMG has not clearly foreseen the effect of the new generation. This will depend on an open-minded creative approach which will not be a result of "set theory" or Basic. Both of these tend to stultify the children and dim their wits if stressed, as they often are, as ends in themselves.

Teachers today have a great responsibility because it is easy to see the enthusiasm of young people when computers are studied.

One major problem is evident: few teachers have any training in computing. The Computer Education Group has urged institutions to put on such courses and published appropriate guidelines. Several courses now exist. There is one in London at South Bank Polytechnic, one in Scotland at Paisley College of Technology, one in Northern Ireland at Ulster Polytechnic, and at my own institution in Leicester.

This is a small but welcome start. I would like to invite major computer firms to sponsor teachers on such one-year in-service re-training courses.

Anyone wishing to sponsor a school-teacher fellowship at Leicester Polytechnic, should contact me and I will discuss all the details with them.

Professor D. E. CONWAY
School of Mathematics Computing and Statistics
Leicester Polytechnic

Commodore tests severe

GUY KEWNEY in his letter (CW, May 13) implied that Commodore approved the CP/Maker as a way of adding CP/M to a Pet because it receives a royalty from us or our UK distributor, Tamsys.

It is indeed true that Commodore will receive a certain royalty in exchange for printing details of our product in its "approved" catalogue, for carrying out extensive approval procedures, for assisting us in many ways: technically, promotionally and by lending us equipment from time to time.

This is normal practice. It should be noted, however, that before agreeing to put any product in the catalogue, it subjects it to rigorous testing of a critical kind. One of our cards was with Commodore for several weeks and it tested both the hardware and the software.

Rather than criticism, Commodore deserves congratulations for providing a valuable service.

G. WEINER
Managing director
Vector International
Leuven, Belgium.

ICL operating system policy

I AM surprised that delegates to the CUA conference could have interpreted anything said by any ICL speaker as a change of emphasis in our operating system strategy or policy.

For the record, VME is very much the system we are developing and selling. DME we continue to support. And CME provides a uniquely elegant way to converge DME and VME, so that customers can use VME to develop new online applications very fast while carrying forward existing applications unchanged.

C. J. CHEETHAM
VME Marketing Manager
ICL, Slough

Rapid climb

AN article (CW, May 6) entitled Systems Builder Climbs from Nought to £1m in Two Years was inaccurate in one major respect. Darkcrest does not have – and never has had – an OEM agreement with Digital Equipment and the company is not a Digital Equipment OEM.

MARCUS PALLISER
Public Relations Manager
Digital Equipment,
Reading, Berks.

Relevant advertising?

I SHOULD like to comment (in fact complain) about the style of advertising in Computer Weekly (May 27).

Why does Computer Search feel it necessary to announce the vacancies of network team leader and co-ordinator beside a pair of female legs in suspender and fishnet stockings? Does Computer Weekly really think this is a valid style of advertising?

Since shapely legs and stiletto heels seemed to be absent from the job description/requirements, I can only assume that such an illustration was there for the (sexist) purpose of titillation.

Advertisements like this not only insult many of their readers, but work to reinforce the attitudes of patriarchy; and that we are certainly better off without.

MUFFY THOMAS (Ms)
Department of Computational Science,
University of St Andrews,
Scotland.

'1984' may follow privacy legislation

MAY I express my great concern at the comments in Alan Simpson's Focus (CW, May 27): "Unless information flows are all monitored and controlled . . ."

If legislation gives power to any government to do what Alan Simpson is suggesting then Britain is lost. We have the technology to create the "1984" society, but few of us wish to bring about such a society; yet it would be possible if such power were given regardless of our wishes.

There are a few universal evils that we all agree on: murder, theft, treason, for example. The existence of computer registers of 25,000 individuals is cited as a good reason for enacting privacy legislation, yet such a register could exist as a manual system and be unaffected. May I suggest the reverse of what the restriction mongers are proposing: we should encourage many more "registers of information" and help those registers obtain, collate and select factual, truthful and verifiable information. If we have a cheap method of storing, communicating and selecting information, and this method is not the sole property of the government, unions or IPC, then we have hopes for a better society. I believe that if only one such register of individuals exists, be it on police files, DHSS files or private files, then those individuals have less chance of being treated fairly. Data privacy legislation, as I've read and heard it discussed, is the "Data Monopoly Bill" or the "Tax-it-out-of-existence Bill".

ANTHONY D. HODGE
Principal consultant
Systems Consultancy
Wakefield, Yorks.

Liveware File by Don

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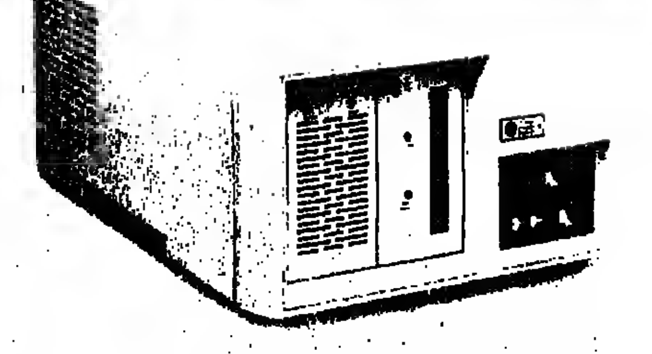

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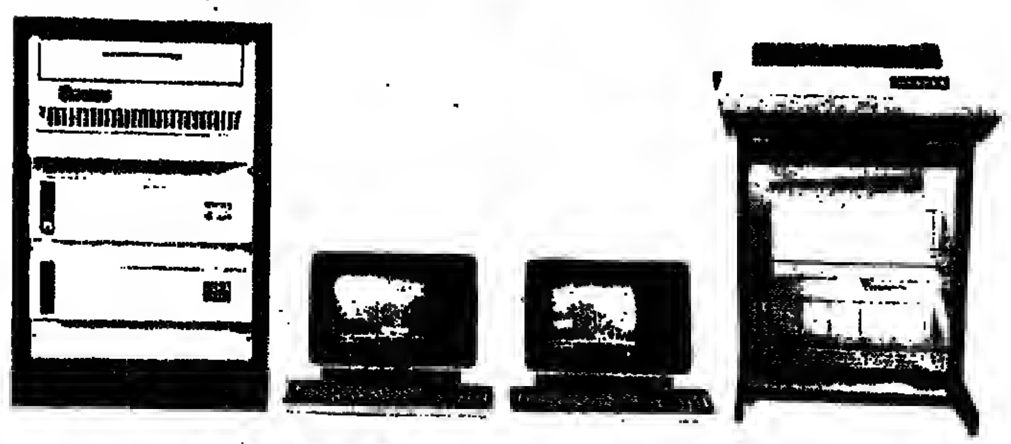

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TKT
COMPUTER SERVICES

PROGRAMMERS PAGE — by Philip Hunter

John Gurd of Manchester University helped develop a Fifth Generation computer using the dataflow technique

New techniques mean new thinking for programmers

THE race is hotting up to provide the hardware and programming languages for the fifth generation of computers.

It looks likely that fifth generation machines will embrace some sort of parallel hardware architecture such as we alresdy see implemented in crude form in large mainframes like the IBM 370, and supercomputers like the Cray 1, and the Cootrol Data Cyber 205.

Parallel hardware will only work at optimum efficiency if it is programmed in languages designed to exploit it, rather than in present-day sequential ones. The implication is obvious: programmers will eventually have to pull up their roots and sow new seeds.

Parallel hardware aims to speed up the executioo of individual programs by processing simultaneously those parts that do not depend on each other for an intermediate result.

One approsch to parallelism is the dstaflow technique being developed by the team at Manchester University led by John Gurd and Ian Watsoo, and funded by SERC, the Science and Engineering Research Council.

A datsflow machine is driven by the data, rather than by sequential instructions which fetch and dispatch dsta items from core and reassign locstions within core. Data flows through the mschine, moving at once to the location at which the next operation is to be performed.

Dataflow machines need new data-driven languages which express relationships between variables, and which reject the traditional von Neumann approach of executing instructions one at a time through seqeotial memory access operations uoder the control of a program counter.

The Manchester team is building a dataflow machine to test data-drivco programming languages and operating systems designed for the new hardware. A prototype of this machioe will be discussed briefly at the fifth generation conference to be held at the Royal Garden Hotel io London early next mooth.

Gurd and his colleagues have been promoting dataflow for large technical applicationa auch aa weather forecasting, but the Japanese, who conceived the idea, have identified it for a mass market.

According to Gurd, current attempts to exploit parallel hardware, as in the Cray I supercomputer, suffer from the fundamental wesknesa that they are based on traditional programming, which in turn is bssed on the idea of executing instructions one by one.

Becsuse the program itself tells the computer when to hire and fire dats from peripheral input devices, there is at once the problem for the programmer of organising his data accesses efficiently.

A simple way of making parallel hardware is to link processors together. Such an expedieot, seeo in the ICL DAP, is cheap, and can achieve impressive results. But programs have to be painstakingly partitioned manually.

Multiprocessors operate sequentially under a program counter. But there are often maoy program countera picking their way through aubprograma simultaneously, posing nightmare communications problems.

Apart from this somewhat informal link of processors, there are two parallel hardware structures in current use: the pipeline and the parallel array.

The pipeline gives speed through overlapping — many different things are going on at once. It coosists of a series of stages, each dedicated to a given task. In theory, a pipeline will at any instant have as many jobs running through it as there are atages.

In a parallel array, many identical or similar actions are going on at the same time. These are ideal for performing operations on vectors of elemeots when the job can be split into many equal identical parts.

The parallel array is slow, but delivera whole batches of results at once. The pipeline is fast, but delivers results only one at a time in machine gun-like auccession.

The two processes work well in harness therefore, and this is seen in most preseot attempts to offer parallel hardware. The Control Data 6600, for example, uses a pipeline to fetch and decode tasks, followed by a parallel array of two adders, two multipliera, a shifter, and a divider.

The trouble with both pipelines and parallel arraya is that they rarely achieve their full speed. The irregular nature of moat programs means that pipelines usually have empty stages, and parallel arrays are effective only with similar operation.

Dataflow is an attempt to exploit fully the capacity of the central processor by filling it with data at various stagea of execution. It aprang from the realisation that hsrdware and aoftware would have to develop together, rather than each going its own way based on sometimes conflicting concepts.

Dataflow machines auch as the prototype now working at Mancheater conaist of networks of nodes, each of which performa a certain operation. Data circulates in packets of information which consiat of a value, and a token to indicate the node which contoina the inatruction for executing the value.

The prototype has just one ring made up of five processors in series. Gurd points out thot in two yeara' time the SERC mochine will possess four complete dataflow rings operating in parallel.

The five processors of the ring are the awitching unit, a token queue, the matching unit, node store and processing unit.

The switching unit controla the flow of data packets from the input/output unit, and the circulating dataflow system. In the case of the Manchester prototype, the input/output unit is a conventional computer, a Digital Equipment LSI-11, which has all the standard peripherals including a telephone link to external mainframea.

The token queue ia a first in, first out buffer for the data packets with their tokens. It accepts the packets from the switch and feeds them on to the matching store.

The matching store is the moat critical part of the system. It marshals data packets with the same tokens, and sends them to the same node.

When all the data packets destined for a particular oode have arrived, they may have an arithmetic operation performed on them, such as addition. Or the node may order one of two actions according to the value of just one data packet — in other worda the equivalent of a simple IF type statement in a high-level language.

The node atore accepts the clusters of data packets ordered according to their destinatioo node from the matching unit, and constructs an executable program for the processing unit.

In the prototype, the processing unit is built for maximum flexibility, and consists of a pipeline and a parallel array of proceasing elements. The pipeline performs fast operations such aa a collection of performance statistics, a vital part of any hardware prototype. The procesaing elemeots perform the hard number crunching.

Gurd demonstrated the prototype to me on a program to calculate the factorial of the first 700 numbers — that is, all the first 700 numbera multiplied together. The execution tioe fell in proportion as additional processing units were linked in, so providing a perfect example of the benefit of parallelism.

The algorithm used demonstrates the kind of thinking programmers will need to uae to exploit parallel hardware. Here it is in pseudo-code:

```
1 FACN = FAC(1,n) WHERE
2 FAC(X,Y) = Y IF X = Y
3 ELSE FAC (X,Y) =
FAC(X,(X+Y)/2)*
  FAC((X+Y)/2 + 1,Y)
```

The * in line 3 indicates that the two FAC functiona are to be multiplied together.

The point of the algorithm is that it continually aplits the problem into two, until it is multiplying sets of adjacent numbers. Then the recursive calculation shrinks back, piecing together the fragments until it arrives at the one number which ia the finished result.

Algorithms to beat exploit parallel hardware will have to be capable of being split in this way.

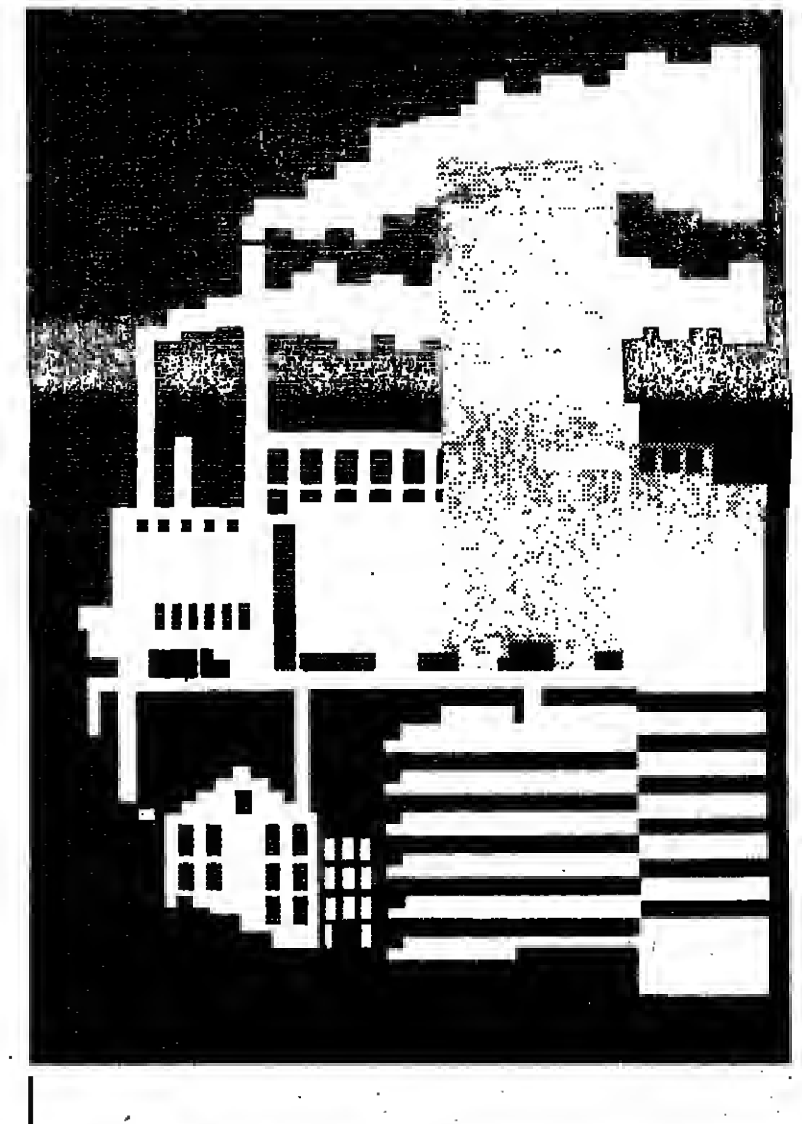
GURD . . . Users dissatisfied with current vector array processors.

PUZZLER

AN athletically-minded ayatems analyst decides to carry out "trials" at the Underground station near his office. One lunchtime he walks down the moving descending-escalator at his normal pace, one step at a time, and takes 50 strides to reach the bottom.

Next, having returned to the top, he runs down the escalator three times as fast as he walked (once again taking one atep at a time). At this greater speed the number of strides taken to reach the bottom rises to 75.

How many steps are showing on the escalator? See page 46 for solution.



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(Applications not accepted after June 14. No school parties or children under 16.)

PEOPLE

Baric MD appointed after meteoric rise

BARIC Computing Services has appointed Chris Gent managing director. It was a swift climb to the top for 34-year-old Gent, who joined the ICL/Barclays Bank owned company three years ago. Gent has also been made a divisional director of ICL.

Gent started with Baric as market development manager and promotion to manager of strategic sales and later product marketing manager followed. In his role as product marketing manager Gent took responsibility for defining and implementing the company's market direction after the launch of its nationwide computer services.

Former Baric MD Keir Hopkins was appointed manager of ICL'a applications systems division in March, and Gent has been acting general manager since then.

Hans de Lange has been named general manager of Rair's French subsidiary Rair SARL. He has acted as an independent European advisar to French and UK computer companies for several years, and has also worked for Burroughs for eight years – one year based in Saudi Arabia and seven in Amsterdam as Burroughs' branch manager. Rair has companies in the US, UK and West Germany as well as the new French subsidiary. One of de Lange's first tasks is to recruit more sales and sales support staff to handle and boost current French sales of about 20 Black Box microcomputers a month.

NCC man for IT city

ERIC BIRD has been appointed manager of the Milton Keynes Information Technology Exchange.

Bird was with the National Computing Centre for ten years, where he served as head of education and training, director of the NCC Threshold scheme and manager of the microsystems centre. He served on the Manpower Sub-Committee of the NEDO Computer Sector Working Party from 1979-81.

The Exchange, which is to open later this year, is designed as the centre of a plan which is aimed at making Milton Keynes "the leading city in Europe for the introduction of IT as an integral part of the business and domestic life of the community".

It is to act as a focal point for the business community, providing information, training and a retail outlet for technology related products.

Nexel promotion

NEXEL, the company formed to take over the service business previously done by Nexos Office Systems, has a financial director. He is Tony Morgan, a chartered accountant, who worked for 10 years with Touche Ross latterly as manager of the Bristol audit department, before joining Nexos as financial controller two years ago.

BEAMA chief

THE British Electrical and Allied Manufacturers' Association, BEAMA, has elected Gordon Gaddes of the British Standards Institution as director-general, to succeed Kenneth Edwards. Edwards has become deputy director-general at the CBI. Gaddes is the BSI's director of information services, marketing and resources.

Football

Summer Computer League

North Division I

Gryphon A	13	H'hikers	0
Kingston's	0	SBS	3
ICL A	1	Memnoll	3
Bissell	4	Ashbourne	4
Forest	1	Datapoint	3
Prov Life	1	NCR	2
SBS	3	Gryphon A	0
Memnoll	4	Kingston's	3
Ashbourne	2	Forest	1
Datapoint	8	Prov Life	0
ACR	3	ICL A	6
H'hikers	1	Bissell	6

North Division II

ICL B	1	William Fitt	3
UDT	5	SCS	1
Logica Barnet	0	Benham's	7
Apex	2	Old Palace	5
Logica	2	Gryphon B	9
ICCH	2	Sperry Univ	5

Cricket

CW v Logica — CW won by 7 wkts

■ Sam Samuel, previously a product specialist with Modcomp, has joined Rack Data as service manager. Sales executive Mike James has also joined Rack Data, from Perfec.

■ Eric Cole has left Data Recognition, where he was national sales manager, to join DRS as an OMR system sales executive.

■ Bob Dunn has been appointed sales manager for Distributive Computer Systems of Coventry. Previous experience includes 10 years with Honeywell.

■ Ray Paaqualone has been named vice-president of operations at the peripherals division of Pertec. He joina the company from Clairol where he was VP of operations.

■ Patric Curwen, who until recently was with Logica VTS where he managed various projects in the Office of the Future operation, has joined CAP as office systema group manager.

■ Paul Freezor has become a senior sales engineer with ATS Telemetry. He was last with Cossor, where he played a leading role in the development of micro-based telemetry systems.

■ Nick Marshall, previously a sales manager with Control Data, has joined CTL as a senior sales executive covering Greater London and Essex.

■ Alwyn Jones of the City University Business School has been appointed deputy dean.

■ Don Crowle has been appointed sales executive for Greater London with Intergraph. He joins the company from Computervision, where he was a corporate accounts executive. Roy Tomlin is Intergraph's other new sales executive, and he will cover the Northern Home Counties, the Midlands and the North of England. Formerly he was with Versatec, also as a sales executive covering the Midlands and North.

■ Bill Winter, until recently operations manager of Westinghouse's advanced technology labs in Baltimore, Maryland, has joined Storage Technology as vice-president and general manager of its microtechnology division in Boulder, Colorado.

■ Graham Northey has been appointed to the new position of sales manager with Chernikeeff Telecommunications. He was formerly responsible for UK sales of line printers and OEM sales of disc drives at Teleprinter Equipment.

■ Ian Hillier-Brook, previously European marketing manager with Centronics, has joined System Industries Europe as operations manager for Europe.

■ Manfred Scheurer has moved to Shugart as regional marketing manager for Northern and Central Europe, replacing Wolfgang Schaefer who has become managing director of Synelec. Scheurer was previously Central European sales manager for Zilog.

■ Mike Gardner has been appointed sales executive with the micro systems division of Newbury Labs. His last job was as manager of the Telecomputing bureau in Oxford.

■ Henry Montgomery has been appointed to the newly-created post of executive vice-president and chief operating officer with MicroPro in San Rafael, California. He was previously president of his own management consulting firm.

Hoskyns boss

TONY ROBINSON has been appointed managing director at Hoskyns Group. He succeeds Jim Feeney, who in his six years as MD saw the company grow from UK sales of £3 million to anticipated sales of £25 million this year. Feeney is now pursuing other business interests.

Robinson joined Hoskyns in 1967 and has recently been managing director of one of the three trading companies in the Hoskyns group, Hoskyns Systems.

New MAI address

MAI has opened a second Midlands office in Birmingham. Manager is Stuart Smith, who joins from Q1 Europe as Midlands business manager.

The address of the new office is Scala House, Holloway Circus, Queensway, Birmingham B1 1EQ. Tel: 021-643 8117.

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DIARY

JUNE 18
Communications – getting it all together. Sir George Jefferson, chairman of British Telecom. BCS. Royal Society, London SW1. Details BCS external relations dept.

Commercial use of APL and achievements. UK APL User Group. Details G. Sutcliffe 01-788 7272 ext 2715.

JUNE 20
Visit to the Midland Railway Trust. BCS Nottingham Group. Details Ray Fowler on Nottingham 415415 ext 4725.

JUNE 23
Petnet and Pet computer networks. BCS Sussex Microcomputer Group. Meeting Room, King and Queen, Marlborough Place, Brighton. 7.30.

JUNE 27-JULY 2
Computer-aided design of filter networks. Second IEE vacation school at University of Essex. Details IEE, 01-240 1871.

JUNE 28
Local area networks. BCS WP&OA SE branch. United Reform Church, Small Hall, Addiscombe Grove, Croydon. Details Sandy Hathaway 66-35925.

JULY 6
Briefing expert systems. Edward Feigenbaum. BCS Expert Systems Group/SPL. Royal Garden Hotel, London. Details SPL Fifth Generation Computer Project 0235 24112.

JULY 6-9
Man/machine systems, international conference. BCS/IEE. UMIST, Manchester. Details IEE 01-240 1871.

JULY 7-9
Second British national conference on databases, BNCOD-2. BCS/Universities of Aberdeen and Bristol. Bristol University. Details Dr M. J. R. Shave 0272 24161 ext 846 (mornings).

JULY 7-9
Fifth generation international conference. BCS Expert Systems Group/SPL. Royal Garden Hotel, London. Details SPL 0235 24112.

JULY 15
Auditors' brains trust. EDP Auditors' Association Inc. Little Ship Club, Bell Wharf Lane, Upper Thames Street, London EC4. 5.00.

CONFERENCES

■ ELECTRONIC Privacy and Authentication Technology is the title of a two-day workshop to be held at Hatfield Polytechnic on July 19-20. The topics on Day One will be public key systems, authentication, protocols and related topics. On Day Two DES and other algorithms, software protection, speech systems, standardisation and related topics will be discussed. Accommodation will be available. Details from Mrs Jill Stern, Administrative Assistant, tel: Hatfield 68100 extension 386.

■ THE Second British National Conference on Databases will be held at the University of Bristol on July 7-9. Although intended to focus on British research, it will include three invited papers by international speakers: New Trends in Database Systems by Michel Adiba of IMAG, Grenoble, France; Aspects of the Functional Data Model by Peter Buneman of the University of Pennsylvania, US; and Null Values by Chris Date of IBM, San Jose, California, US. The conference is organised jointly by the computer science departments of Aberdeen and Bristol Universities and by the BCS. Further details from Dr M. J. R. Shave, Dept of Computer Science, University of Bristol, Bristol BS8 1TW. Tel: Bristol (0272) 24161 ext 846 (mornings only).

■ AN international conference on Man/Machine Systems has been organised by the Institution of Electrical Engineers and will be held in Manchester on July 6-9. Its aim is to explore the problems, both technical and social, associated with the interaction between men and machines and it is hoped that a balance has been achieved between technical and social factors, large and small systems, and practical experience and research. Some topics to be discussed are System Design: The Human Component, I/O Methods, Aids for the Handicapped, Communication Systems, and Introducing New Systems.

An exhibition has been organised to run in conjunction with the conference. Further details can be had from Christina Dagnall, Press Office, IEE, Savoy Place, London WC2R 0BL. Tel: 01-240 1871.

■ CADCAM Association's second international conference and exhibition, entitled Computer-Aided Design and Manufacture Education and Training, will take place in Manchester on July 19-22. Some topics include CAD in the Cambridge Engineering Tripos, CAD Educational Software for CAD Teaching, Teaching CAD for Electronics, and Large-Scale CAD Training. One day will be set aside for a programme of presentations and demonstrations of CAD/CAM systems. The conference is organised by Scientific and Technical Studies.

For further information about CAD ED 82, apply to Suzanne Mayhew, Scientific and Technical Studies, Norwich House, 11-13 Norwich Street, London EC4A 1AB. Tel: 01-242 2481.

COMPUTASTARS – SECOND LONDON HEAT

by Andrew Thomas

Rank Xerox – poised to take second place.

Gerry James sprints Rank Xerox towards a commanding lead.

Martin Ellison – pain in the diodes.

Bath time in the steeplechase.

Sun shines on the capital as Ford and Rank Xerox blaze to victory

AN untypically hot and sunny Bank Holiday Saturday was the setting for the third 1982 Computastars heat at Barnet. This was an overflow heat, added to the programme to accommodate the large number of London area computer departments wanting to enter the annual 'DP Olympics'. As such it involved only 16 teams, but the competition and the volume of the supporters were well up to standard.

The javelin put in its first 1982 appearance, and supplied me with my most hazardous assignment to date – standing in the danger zone to supply action photographs. John Watson, Number One of the London Borough of Barnet 1, put in an excellent performance on his home territory, winning the individual event and helping his team to victory.

In the women's competition, Rank Xerox beat the Bank of England into second place by a convincing margin of 40 points to 23. Bank of England Number One Anne Terry also took the individual lead after the first event.

COMPUTASTARS

Sponsored by Computer Weekly

Also seen for the first time this year was the rugby relay. This event would take most of this page to describe accurately, so suffice it to say that it involves a lot of kicking, catching, cursing, carrying and confusion.

Ford 1 displayed either the greatest degree of skill or luck, narrowly beating Logica 2 into second place, with Barnet 1, Rank Xerox and Gonzalez Byass tying for third. The women from Rank Xerox beat Bank of England by 45 points to 30, and Gonzalez Byass women showed that rugby was not really their strong point, scoring just six points.

Golf, however, proved to be more to their taste, the team beating Bank of England and Rank Xerox into second and third places respectively. Karen Standing, Number One the victorious Gonzalez Byass team, also won the individual competition.

Best male golfers were Ford 1, but Logica also appeared to spend a considerable amount of time on the greens, taking second and third places with its two teams. Logica 2's Number One Philip Edge, was best individual puttsman.

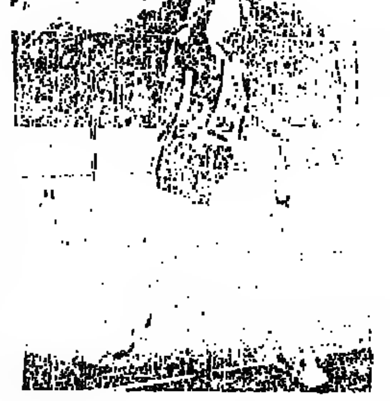
Jumping sideways across a board in a temperature of 75 degrees is not one of the most relaxing pastimes, but Rank Xerox gritted its teeth and beat Wimpey into second place by the slender margin of one point, the Wimpey men's best performance of the day. Xerox's Number One Kartar Davatwal, was best individual jumper. Xerox women duplicated both their male counterparts teams victory and individual success.

Ford 1 proved to be the driving force in the men's 100 metres, beating joint second placed Logica 2 and Bank of England 2 by a six-point margin. Bank of England Number One David Vorberg gave everyone a good run for their money to take the individual lead over Grant Mansfield of Ford 1.

Rank Xerox and its Number One Anne Terry again took the top placings in the women's heat.

The team and individual placings in both the men's and women's competitions after five events were to remain unchanged to the end of the competition. Rank Xerox women had a colossal 71-point lead over second placed Bank of England.

By the end of the afternoon, the difference had been stretched to no fewer than 137 points, leaving no doubt as to which women's team would be appearing in the Birmingham finals. Anne Terry took the individual title despite having to take part in the steeplechase with a pulled muscle.



Photography can be dangerous . . .

Ford 1 drove on to victory over the men from Rank Xerox, and Grant Mansfield beat John Watson into second place in the individual competition. Small unit entrant Gonzalez Byass also goes to the final (nothing at all to do with its presentation of Champagne to each team), as do the veterans of Barnet 2.

MEN'S TEAM RESULTS

Rank	Name	Points								Total
1	Ford Motor Co 1	24	45	33	30	41	45	36	35	289
2	Rank Xerox	26	36	22	37	32	42	28	34	257
3	London Borough of Barnet 1	30	36	24	18	27	36	25	32	228
4	Logica 2	14	42	29	18	34	21	30	30	218
5	Logica 1	15	21	30	30	24	36	30	26	212
6	Arthur Andersen	10	21	29	29	29	33	29	26	206
7	Gonzalez Byass (S)	21	36	22	25	27	36	15	23	205
8	Wimpey	21	24	24	36	28	21	24	18	196
9	Bank of England 2	20	30	20	27	34	12	22	9	174
10	Samuel Montagu	22	12	24	19	28	21	21	26	173
11	Samuel Montagu 2	18	18	21	27	16	33	17	19	169
12	London Borough of Barnet 2 (V)	23	12	27	20	20	21	23	20	166
13	Ford Motor Co 2 (V)	24	6	23	17	19	6	16	15	126

MEN'S INDIVIDUAL RESULTS

Rank	Name	Points								Total
1	Grant Mansfield (Ford 1)	8	15	13	11	13	15	15	14	104
2	John Watson (Barnet 1)	15	12	10	12	9	12	13	13	96
3	Kartar Davatwal (Rank Xerox)	10	12	10	15	12	14	10	10	93
4	Philip Edge (Logica 2)	8	14	14	8	9	7	13	15	88
5	David Bennett (Gonzalez Byass)	8	12	12	11	8	12	8	7	78
6	Paul Stephens (Logica 1)	7	7	11	10	10	12	10	10	77
7	Steve Murray (Samuel Montagu 1)	6	4	14	6	12	7	5	13	67
8	David Vorberg (Bank of England 2)	8	10	10	9	15	4	5	5	66
9	Martin Ellison (Arthur Andersen)	2	7	9	9	7	11	10	9	64
10	Robin Hair (Samuel Montagu 2)	5	6	11	12	8	11	4	5	62
11	David Grant (Ford 2)	11	2	14	6	7	2	6	7	55
12	Victor Ives (Barnet 2)	7	4	9	5	7	7	6	5	50

WOMEN'S TEAM RESULTS

Rank	Name	Points								Total
1	Rank Xerox	40	45	15	42	38	45	39	29	293
2	Bank of England	23	30	21	10	25	6	25	16	156
3	Gonzalez Byass	20	6	27	18	32	6	18	21	148

WOMEN'S INDIVIDUAL RESULTS

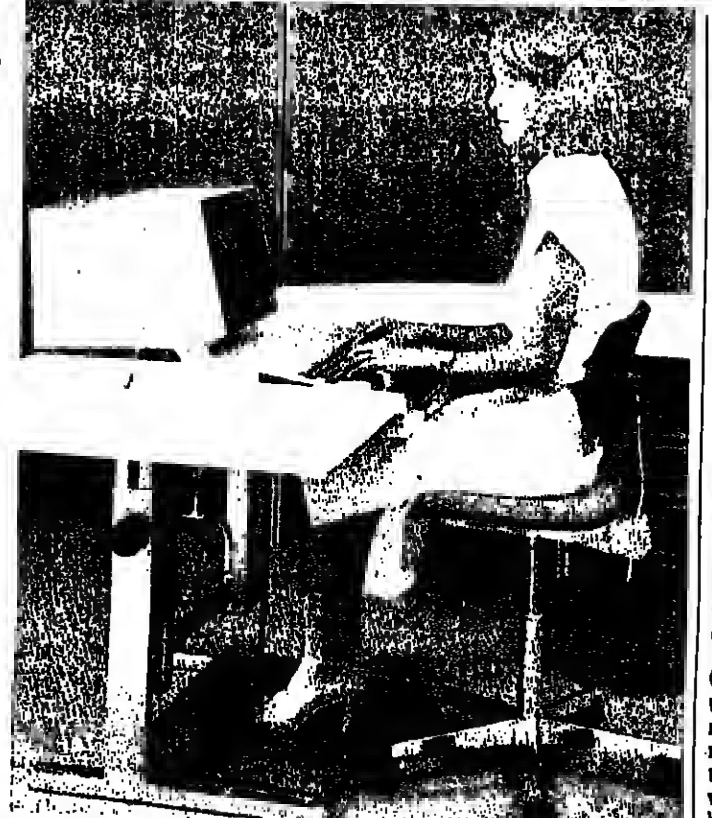
Rank	Name	Points								Total
1	Anne Terry (Rank Xerox)	15	15	9	13	12	15	9	2	90
2	Karen Standing (Gonzalez Byass)	13	2	10	12	10	2	12	10	71
3	Karen Polden (Bank of England)	6	10	8	2	11	2	9	9	57

Events are from left to right: Javelin, Rugby, Putting, 100 Metres, Football or Hockey, Sprints and Steeplechase. S denotes a small units entry and V denotes a veteran team.

Anne Terry jumps towards first place in the women's individual table.

[illegible] Mansfield – second in the putting and first overall.

New-breed terminal table


The Martela-Conti terminal table.

THE Martela-Conti terminal table has been developed for the new breed of low profile word processor and computer keyboards and VDUs.

Designed to be used in conjunction with the standard height Conti desking range, the height of the keyboard table is adjustable between 60 and 76mm, with further variations available for the screen table level and angle.

Extra work areas are available and are simply bracketed to the main unit.

Unique construction features substantially reduce vibration and noise transmission, says Martela.

Conti terminals are finished as standard in white or cream and are on immediate delivery. Wood finished surfaces are available to order.

Prices start from about £165 for a totally integrated terminal and desking system.

Martela Contract Interiors, a subsidiary of Martela Oy of Finland, offers a wide colour range, and a complete office design and installation service.

Martela products can be inspected at the company's showrooms in Holborn, London.

Martela Contract Interiors (CW), 210 High Holborn, London, WC1V 7BP. Telephone: 01-831 8771.

Training system features colour and graphics

INTELLIGENT Systems, manufacturer of colour graphics computers and terminals announces CATS-80, its computer augmented teaching system. The product is aimed at the educational and industrial training markets.

Product manager Peter Curnin says, "These markets have been seeking a system which combines ease of use, effective instructional methods and low cost. CATS-80 satisfies these requirements and adds the instructional power of colour and graphics."

A typical course written on CATS-80 presents information to the student in any of several formats. A "Preset" presents the materials to be learned, asks questions and supplies answers. A "Review" utilises the branching capabilities of CATS-80 to present information based on student response to questions.

If a student successfully answers questions on the material presented, the course branches to new information. If the student is not successful, the course repeats information and questions or branches to a remedial mode. Three test modes "Quiz", "Test", and "Final" select questions randomly on previously-presented material.

Curnin believes that "virtually any subject is suitable for presentation through a CATS-80 course, from foreign language to geology to electronics. And courses are easily written even by first-time computer users."

Intelligent Systems is offering a special author incentive programme for prospective course authors to buy a complete CATS-80 system for $2,995. The system includes the 3651 colour graphics microcomputer, 32K memory, the CATS-80 authoring software with documentation.

CATS-80 is available within 30 days of order.

Intelligent Systems Corp (CW), 225 Technology Park, Norcross, GA 30092. (404) 449-5961.

The GDS-1700 Auto.

Controlled camera

A COMPUTER controlled camera system for automatic production of 35mm slides and prints from a colour or monochrome display has been introduced by GDS Graphic Display Systems.

The GDS-1700 Auto features the Nikon F3 camera mounted behind an optical hood, pivot-hinged to the display, with camera operation under computer control through a camera interface with triggering designed and built to the user's specification. Cameras other than the Nikon F3 can be accommodated on request.

Application areas include market research and CAD/CAM.

Graphic Display Systems (CW), 76 Hemingford Road, Cambridge CB1 3BZ. Telephone (0954) 210486.

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Local computer clubs, software houses and the manufacturers and distributors of personal computers will have the opportunity to meet with the growing number of business users and enthusiasts in the North.

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STC's Tele-check card authorisation terminal.

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TELE-CHECK, the company's second generation electronic credit authorisation terminal, has been announced by Standard Telephones and Cables. It deals with the charge, credit or bank cheque cards of up to 10 card companies, incorporates a normal telephone with repertory dialling and automatic re-dial, and is self-checking by means of a built-in diagnostic program.

For credit authorisation a card is passed along a slot at the rear of the Tele-Check unit, the amount of the transaction is entered on the keyboard and the "proceed" button pressed. The unit reads the magnetic stripe on the back of the card to identify the database and the individual account, and automatically dials the host computer or authorisation centre.

A 32-character display on the unit shows the required operator action at each stage.

Where the magnetic strip is damaged or absent, the embossed card data can be read by the operator and entered via the keyboard. The unit has an automatic sequence check for the keyboard-entered data.

Seconds later, the response from the computer or authorisation centre appears on the display and will normally be an instruction to complete the transaction.

If the computer decides that personal assistance is needed from the authorisation centre, the unit will automatically dial the appropriate number and connect the caller to the handset of the integral telephone.

Features of Tele-Check include full alphanumeric data entry, with editing on some local input data.

Standard Telephones and Cables (CW), 190 The Strand, London WC2R. Tel: 01-836 8055.

Text storage costs cut

A TEXT store module for the Series 5000 range of high resolution raster graphics terminals and OEM generators is announced by Sigma Electronic Systems.

Text store modules are interchangeable with pixel stores allowing the user to configure a terminal or generator with the graphics/text mix to suit the application. Previously users have had to use up valuable pixel store for text display tasks, thereby reducing the cost-effectiveness of the unit.

Sigma Electronic Systems (CW), Sigma House, North Heath Lane, Horsham, Sussex RH12 4UZ.

Intelligence for Micropad

AN addition to the range of Micropad hand print data entry terminals has been made with the introduction of integral intelligence.

This enables the user's application documents to be defined within the unit without any need for programming skills. Any number of input forms may be generated, stored in the host computer and called up as needed.

Micropad prices now start at £995 with various options available; intelligence costing [illegible].

Quest CIE (CW), [illegible] Lane, Chandlers Ford, Eastleigh, Hants. Tel: [illegible]

DEC software takes new direction

IN April Digital Equipment, DEC, announced a scheme to assist third party software suppliers to sell to users of DEC hardware. It also set up a directory of applications software called Digital Classified Software.

But some independent software suppliers have been selling successfully into DEC's customer base for a number of years without the benefit of such a scheme.

Wootton, Jeffreys and Partners, for instance, saw a gap in the market created by insufficient facilities on the RSTS/E operating system, particularly in the case of its file structure. The company's proprietary operating system, Multi-User System for Interactive Computing (Music-11) is a DEC lookalike of the standard operating system for Prime minicomputers, Primos.

Another DEC OEM, Xoren Computing, recognised that users faced a major obstacle if they wanted to move programs and data from one operating system environment to another on the PDP-11 minicomputer range as a result of DEC's philosophy of providing separate operating systems to cater for specific market sectors. Xoren's IPL-11 Interprocessor Link handles asynchronous communications over leased or telephone lines between processors.

DEC's commercial strategy in the past decade has centred on vertical market segmentation, but a change of direction was needed for it to achieve its declared goal of becoming the world's largest computer supplier. The company has had to supplement its own internally developed applications software to make inroads into new markets.

The Digital Classified Software scheme is an extension of DEC's earlier referral policy. Previously a formal association with the software supplier was avoided. But the new marketing venture entered into by DEC will involve it in evaluating products and the commercial viability of suppliers.

DEC will now actively look for gaps in its software range and look to outsiders to supply the solution. Far from relinquishing control over software development, DEC will be able to determine which operating systems it wants applications to be developed for.

DEC's launch of a new bottom-end 32-bit minicomputer, the VAX 11-730 at a price comparable with the 16-bit PDP11-44, aims to consolidate the DEC user base on to a single operating system, VAX/VMS.

Currently the most widely used PDP-11 operating system for multi-terminal use is RSTS/E, and DEC is wary of attempts by Perkin-Elmer, a rival 32-bit minicomputer manufacturer, to move RSTS/E users to its own machines and single 32-bit operating system.

Applications from newspaper systems to scientific research

DEC minis have a key role in a variety of markets ..... David Casey reports

BEHIND the customised fascia of 75% of the newspaper systems on the market today is a DEC minicomputer. *The Mail on Sunday*, which had its Fleet Street debut a month ago, is composed on an Atex 7000 System — a pair of modified PDP-11/34 processors supporting specialist software. At Wolverhampton, DEC kit forms the basis of Press-11, the system which keeps the *Express and Star* in production and handles the commercial side of running a daily paper.

But while DEC plays a significant role in the newspaper sector, its presence is no less important in other areas of computer application. As a research tool in science and technology, for example, the 16-bit PDP-11 series is unrivalled. With the introduction during the past four years of three related VAX-11 machines, DEC is already securing a share of the supermini sector — an indefinable marketing target between the mainframes and the standard mini.

How DEC performs during the 1980s will prove as much a test for the company's marketing strategy as for its skills in product development. The announcement in May of a scheme for marketing independent software is an attempt to narrow the widening gulf between DEC's roles as a hardware manufacturer, and as a systems house providing a total solution.

The chasm is, paradoxically, of DEC's own making: its current 11 range, from the LSI series to the 32-bit VAX computer, has gained a reputation as a "universal" hardware base well suited to independent software development.

A major factor in Digital Equipment's minicomputer success has been the high degree of compatibility maintained over more than a decade. In launching the PDP-11/20 (the 11/15 for OEM markets), twelve years ago, DEC was filling a gap between the 36-bit DEC System mainframes and the 13-bit PDP-8.

Series 8 had become a "mature" product with a finite commercial life: the PDP-11 was planned as the principal revenue earner of the middle and late 1970s.

The PDP-11/20 was not the first 16-bit minicomputer, but it pioneered the use of a single bus architecture (the Unibus) for that generation of machine. An integrated instruction set controlled I/O operations and memory, its 16 address lines enabling it to look at 64 Kbytes of memory.

Second generation PDP-11 machines attacked the mini market at two points: the 11/05 retained the same performance at a lower price, while the 11/35 increased the processing power per pound. Incorporating memory management on the 11/35 supported 18 address lines and access to a memory of 256 Kbytes — a fourfold increase from the 11/20. The impact of the larger memory capacity was not fully realised until the introduction of significantly cheaper machines. The ubiquitous PDP-11/34 appeared to fill this role.

Production of 11/34 variants will continue even though the system has been discontinued as DEC's front-line mini. For OEM suppliers, however, its replacement would involve extensive redesign of end-user products.

As the workhorse of the DEC mini range, the 11/34 has proved an exceptionally robust machine. Examples of this system operating under the most adverse conditions are legion. Tote Computers — the DP division of the Tote Board — runs 14 11/34s to process gaming stakes on racecourses around the UK. Systems are taken by lorry to race meetings: the problems are minimal. The Tote's only concession to hardware security is running pairs of processors in parallel.

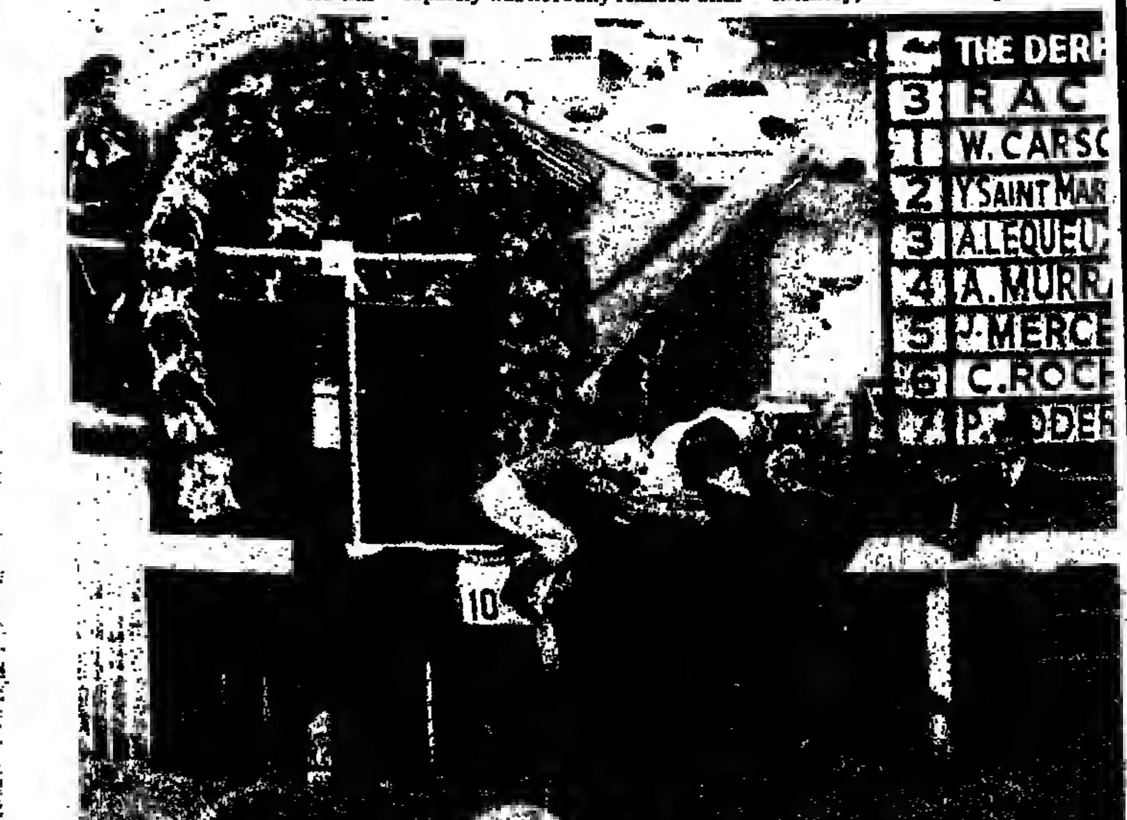
A quarter-megabyte of memory is the maximum address space that can be managed on an unmodified 11/34. (In OEM applications, additional hardware extends the memory mapping to two megabytes or more). With a further four address lines, providing access to a total of four megabytes of memory, the 11/70 represented a significant advance on the PDP-11/45, a high performance version of the 11/35.

For relatively small extra cost, the 11/70 offered cache memory and DEC's Massbus. The Unibus alone had proved inadequate for the tasks that could be handled on a processor loaded to the capacity of the 11/70: as the size of the memory increased, and further discs and tape drives were added, the Unibus performance deteriorated rapidly.

A 32-bit data highway — the Massbus — provided a totally transparent channel for the transfer of data within the system. To the user, the operational speed of a 32-bit machine was available on conventional 16-bit architecture.

Only one of DEC's PDP-11 series was designed for a specific marketplace. The 11/55, supporting Fortran and a high-speed memory, was intended for scientific applications. It proved an effective marketing tool as an entree to other DEC systems. Armed with an impressive benchmark performance on the 11/55, DEC was able to secure invitations to tender in the technical market. With this opportunity to bid, it

● Turn to page 22


Tote Board's DP division runs 14 11/34s to process gaming stakes on UK race courses.

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- XA8 cross-assembler targeting to 8080, Z80, 8085, Z8, 8035, 6500, 6502, 6800, 6801, 6803, 6809, 1802, 9900

All products available hosted under DEC operating systems RT-11, RSX11-M, RSTS, VMS as well as UNIX V6/V7, Xenix-11 and, of course, Idris, Whitesmith UNIX related operating system.

For further information contact Whitesmiths exclusive distributors:

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SOFTWARE MONTH

David Casey reports on the marked shift in DEC's marketing policy, aimed at warding off growing competition

Digital Equipment emerges as a single-source supplier

TURNING boardroom objectives into commercial reality can become a nightmare for a multinational computer manufacturer. The effect of adverse exchange rates and resistance from introspective national governments add to the problems of marketing in a recessive worldwide economy. When a turnover measured in billions of dollars is involved, subtle changes in local conditions are reflected as seven-figure variations in profits.

A marked shift in Digital Equipment's marketing policy during the past year is its attempt to ward off competition from the major international systems suppliers and the growing number of independents flourishing under advanced technology subsidies.

From its former role as a hardware manufacturer supporting a narrow range of proprietary software products, Digital Equipment is adopting the stance of an integrated single-source supplier.

The acceptance of minicomputers and 16-bit micros as convenient systems for smaller business applications, has brought to the marketplace a different type of purchaser from the DP professional of the 1970s. The new generation of customer, using the computer as just another management tool, demands a total solution from a supplier – every facility from systems analysis to office consumables must be available.

DEC's commercial strategy for the past decade has centred on vertical markets, oriented towards the sale of its hardware. Reputations were established during that time in key industry sectors.

To achieve its long-term target of being the largest computer supplier in the world, DEC has needed a change of direction. It was recognised that applications software should be developed internally for products which would preserve DEC's share of an existing sector, or make inroads to a new market.

Joint marketing arrangements with independent suppliers are intended to provide access for the company to specialised industry areas. The recent involvement with Ferranti Cetec in CAD systems on the VAX-11/730 indicates the type of co-operation that the company envisages.

On a second front, closer ties are to be forged with software houses through a scheme described in the UK as Digital Classified Software. As an extension of DEC's earlier referral policy – in which a formal association with the software supplier was avoided – the new marketing venture involves the evaluation of products and their originators.

Mike Wright, UK applications products manager, outlined the company's approach: "We accept that we cannot offer every item of software required by the customer. But it is equally unacceptable to continue referring users to a third party for these products, when there is a chance that a company might not even be trading tomorrow."

The concept of Classified Software is simple. DEC will take the initiative to identify products for the scheme if a gap exists in its own range, and the company is not prepared to invest in software development.

Wright expects software producers to offer a further tier of packages which supplement DEC's in-house products.

Through whichever channel the software is accepted by DEC, the product will be subject to evaluation, with review levels ranging from an overview to a high-level check on functionality and documentation.

Whether the scheme will prove viable will depend on the agreement that DEC can reach with the independent supplier. From guidelines indicated by Wright, the mechanism appears to be flexible: "While the objective would be to secure exclusive marketing rights worldwide, the contract would have to be negotiable."

Internal software development, and the packages taken up by DEC under co-operative agreements, will indicate the company's product strategy for the next five years.

Within the framework of system software for the PDP-11 range, a definable market exists for independently developed operating systems. The TSX extension to RT-11, from S&H Systems of Nashville, has no direct competition from DEC in a potentially lucrative sector of the market. Since a basic RT-11 licence is required to handle TSX and its successor TSX PLUS, the product can be viewed by DEC as an OEM package to increase the functionality of its existing systems.

For DEC to promote TSX under any of its joint marketing schemes would negate many of its efforts to standardise RSX-11M as the main-line PDP-11 operating system.

DEC's executive Professional 300 micro series has adopted P/OS, single-user version of RSX-11M, rather than RT-11. The range, based on a 256 Kbyte 11/23 chip, is being marketed as a dual-purpose device – functioning as a standalone system and as a distributed workstation. A marketing agreement recently concluded by DEC with Micro Focus indicates that a further target for the Professional is the system development market.

DEC's decision to introduce the new VAX-11/730 supermini at a price comparable with the 11/44 will switch the focus from RSTS/E to VAX/VMS as the general-purpose timesharing system on multi-terminal installations. No less significant is the grouping of the company's Office Plus programme around the VAX-11 range.

Word processing, DP and an information retrieval system are to be supported by typesetting software, and the complete range of DEC's communications facilities. Much of the software development for Office Plus will be the responsibility of independents offering products under the Classified scheme.

DEC's Wright has set a goal of a thousand applications running under VAX/VMS many of which will be directed towards the office market.

The highly successful RSTS/E time sharing system is destined to be the next in-house product to undergo a major facelift. As the system software supporting the majority of PDP-11/70 and 11/44 machines, the existing RSTS/E system will be a product without an application. An economy version of RSTS/E for the VAX machine should be seen as a "holding" move while user-friendly variants of RSX-11M are developed.

Software pricing policy will directly affect DEC's success in some of its most important markets. Introducing high performance machines like the VAX-11/730 without a more realistic approach to software charges – will not guarantee demand from the academic sector. With manufacturing plants in the UK, Digital Equipment is able to qualify as a "British" manufacturer when tendering to publicly funded customers.

A sensitive response to the needs of its worldwide customer base – both the commercial enterprise and public authority – will be achieve for DEC its target as the Number One systems supplier. The programme of co-operation with independent suppliers is a step in the right direction, provided that fair and reasonable terms can be negotiated.

One OEM has had to overcome two handicaps during software development

Xoren resolves problems of O/S and storage media incompatibility

THE introduction of a single operating system – VAX/VMS – for the VAX-11 computers introduced in 1978 marked a change in DEC's system software philosophy. A diverse range of operating systems on the PDP-11 series had served a spectrum of applications. RT-11, RSX-11M and RSTS/E had each developed as operating systems in separate market sectors, with IAS and Mumps filling more specialist roles.

As distinct in performance as they are in application, these operating systems have posed a major obstacle when data and programs are to be transferred between dissimilar operating environments. No less easy to resolve are the differences between the types of storage media developed by DEC. Two installations could be running identical programs under the same operating system, but incompatible disc systems could prevent files being switched between the machines on disc.

Xoren Computing, a London-based DEC OEM, had experienced both of these handicaps when developing software for clients. Overcoming the physical transfer of files proved the most tedious hurdle to surmount: for one client, the exchange could only be achieved through an intermediary computer. Files created by Xoren on its RK05 discs were transferred to RL01 packs on a system located in the Home Counties.

John Jarvis of Xoren Computing outlined the solution: "We decided to link the two installations by modem or acoustic coupler and use a low-level routine to transfer files from one system to the other."

From the company's experience in developing serial links between pairs of computers, a package – the IPL-11 Interprocessor Link – was structured to handle asynchronous transmission over a telephone line or comparable communications channel.

Given the differences between the operating systems conceived for DEC hardware, a separate version of IPL-11 was required for each. Since a common file structure, Files-11, is adopted for most of the systems originated by DEC, the material transferred requires no further handling when taken from RSX-11M to VAX/VMS, for example.

Problems arise, however, when one of the processors is running under TR-11 or RSTS/E, with their distinctive file structure. A utility was developed by Xoren to handle the conversion: it will read or create RT-11 and RSTS/E formatted files on Files-11 volumes.

Guaranteeing the accuracy of files transmitted over a potentially bad public line was a further factor to be considered. "For many of our clients, 'clean' data is critical," Jarvis explained, quoting the example of a leading accountancy practice which transfers both programs and data to remote clients through IPL-11.

Xoren has incorporated cyclical redundancy error checking to CCITT V41 standard. Data is transmitted in packets which are checked at the receiving terminal: if an error is detected, the whole of the packet is retransmitted. Should the telephone line go down for any reason, the transfer continues from the last perfect block when the link is restored.

As a point-to-point communications system between DEC processors, the Xoren package has an application in office automation. In view of DEC's "Office Plus" programme of developments announced in April, how does Jarvis see the future for IPL-11?

"The DEC concept is confined to VAX/VMS computers, but there is an expanding market for communications software outside such a framework. The new Professional computer range is a good illustration: it runs under a variant of RSX-11 and will be able to link into 'Office Plus'. Using IPL-11, however, it will also be able to talk to most DEC operating systems including RSTS/E and RT-11 machines."

A diverse range of operating systems on the PDP-11 serves a spectrum of applications.

ROUND UP

SOME recent events in the software industry you may have missed:

■ Software companies have been described as "the glamour stocks of 1981" by New York stockbrokers Smith Barney Harris Upham. Strong management, a first class sales and marketing force and financial strength are seen as the key to success in the industry in its latest quarterly review of the US computer services industry. It projects a growth rate of 30% for the industry in 1982.

■ Osborne Computer has launched a scheme to encourage third-party software sales. It wants to build up its library of authorised software to 100 programs by the end of the year and to encourage software authors with ideas for systems which make use of the Osborne micro's portability. In the US, Osborne will be bundling software as it is currently doing with standard packages such as Wordstar, but in the UK Peachtree will sell independently to individual Osborne dealers.

■ US software house Micro Focus has signed an agreement with IBM to provide applications development tools for the IBM Personal Computer based on CIS Cobol running under the standard CP/M 86 operating system. Other products such as Level II Cobol compiler and Forms-2 screen formatter and source code generator will follow, as well as Cobol Animator which allows a programmer to watch Cobol source code execution in real time.

■ The Royal Navy has used software supplied by Leasco to monitor the movements of Argentinian aircraft and ships around the Falkland Islands. The software was developed on Ferranti minicomputers and delivered to the Navy last August.

■ The National Computing Centre's microsystems centre division has adopted The Last One, a controversial program generator, and will be running a course in June for non-DP professionals to provide them with hands-on experience of the software. The NCC is not claiming that the package is bug-free.

■ An offshoot of mail order business Apple Orchard is to set up a microcomputer software library for short-term rental with a list of 140 well-known applications packages for the Apple II.

From printing to scientific research

● From page 21

could then gear its proposals to standard (but no less efficient) product lines.

If the generation of microcomputers were to be seen as a low-cost entry point to the mini range, a more economic alternative to the Unibus was required. Sharing data and address lines, the Q-bus which evolved cut the cost of interface design, while containing the loss of performance within tolerable limits.

With five products based on Q-bus (Falcon, Professional 300, 11/03, 11/23 and 11/23+), the micro end of the 11 range is now an essential element in DEC's smaller business marketing. One of these systems, the 11/23+, overlaps the performance of the 11/24.

Both support 22 address lines, giving access to four megabytes of memory. The lower-priced PDP-11/23+ can handle only a limited range of peripheral devices; however, the 10-Mbytes RL02 is the largest Q-bus disc compatible with the high capacity Winchesters available on the 11/24.

About half the traditional 11/34 base will be taken by the PDP-11/24 over the next five years. The remainder will move upwards into the 11/44 – the system which will hold the upper end of DEC's 16-bit market, taking over many of the 11/70 applications.

A guide to DEC operating systems

MAINSTREAM RANGE

RSTS/E and CTS500

RSTS/E is a multi-user time sharing system designed to handle 63 jobs and 124 terminals. Carrying the Basic-Plus run-time system and compiler as standard, RSTS/E supports a wide range of languages, including Fortran IV, Basic-Plus-2 and Cobol.

The system is set up so that each user appears to have the computer dedicated to his application. Provided that the system is not overloaded, time sharing is transparent.

RSTS/E is used extensively in education, as it is extremely secure. It provides total isolation between users and is therefore ideal for the commercial time sharing market.

CTS-500 is a commercial "packaged" system which combines RSTS/E with appropriate languages and data management software. DEC describes RSTS/E as being "forgiving", i.e. capable of withstanding handling by programmers. This view is shared by Derek Sully, managing director of Turnkey Systems, distributor for the LexiBOSS Information Retrieval System. "We can rely absolutely on RSTS/E working. It is probably the most developed of the DEC operating systems. You cannot crash it without trying very hard."

As an independent software house, Turnkey has confidence in RSTS/E. Sully commented: "If it is the operating system or the software. If we are working with RSTS/E we know it must be our software."

RSX-11M

RSX-11M is a multi-tasking real time operating system serving the middle of DEC's PDP-11 range. The product was designed to give guaranteed response irrespective of the task. If a real time application is to be executed, RSX will suspend other tasks as required.

The RSX-11 series (RSX-11M, RSX-11S, RSX-11M PLUS) is appropriate to scientific and technical users, with programming experience. It is not a "forgiving" system when commands are entered incorrectly.

The key feature of RSX-11 is the ability to handle multiple programs creating applications simultaneously with no risk of interaction. RSX-11M is supported by DECnet data communications software.

RSX-11M Plus is an enhanced version designed for the 11/44 and 11/70 end of the range, particularly suitable for non-specialist environments.

RT-11 and CTS-300

Designed as a single-user system for real-time operation, RT-11 is available with three different monitors:

● Single Job, which provides control for single-user, single-program conditions and runs on a minimum of 24 Kbytes of memory. Suitable for handling high rates of data transfer in real time.

● Foreground/background, where a secondary task can be handled in background while principal task is pausing. Foreground jobs have higher priority – the system returns from background when required.

● Extended memory, which extends logical program space of foreground and background to maximum of 248 Kbytes. Extended memory is allocated dynamically between programs.

Release 5 of RT-11, expected within a year, is likely to be the last version of the system. DEC regards this as a "mature product" which will only be modified to accommodate hardware developments.

CTS-300 is a commercial implementation of RT-11 designed for integrated DEC Datasystem 300 machines. Program preparation is undertaken in single-user environment, but CTS-300 will support 12 users simultaneously.

Nigel Bevan, chairman of the RT-11 section of the DEC Users' Society in the UK, commented on the "professional nature of the implementation, and the intention to provide user-friendly features irrespective of software costs". As a vehicle for software development on micro systems, he compares RT-11 favourably with CP/M.

VAX/VMS

VAX/VMS is the virtual memory operating system designed for the VAX range of superminicomputers. The system provides a multi-user environment for the simultaneous execution of time sharing, data processing and real time applications.

There is effective upwards compatibility from RSX-11M/S. The VAX/VMS operating system offers host development capabilities by incorporating elements of RSX-11M, including the PDP-11 language processors. One of these functions, the RSX-11M Application Migration Executive, supports the transfer of existing applications from RSX-11M to VAX/VMS.

TWO SYSTEMS WITH LIMITED APPEAL

IAS – Interactive Application System

Limited penetration has been achieved by DEC's elderly general-purpose operating system for large scale applications. The system provides multi-user time sharing and supports interactive, real time and batch tasks simultaneously. Based on RSX-11D, IAS is not easy for operators to handle – very much a "professional" operating system.

Digital Standard Mumps

DSM is a highly specialised operating system which will only support the Mumps language – both products being the result of development at Massachusetts General Hospital in medical records systems. The commercial product has a limited number of applications in non-medical database systems.

DSM can operate on any PDP-11 computer to the 11/70.

INDEPENDENT OPERATING SYSTEMS

Music-11

Multi-User System for Interactive Computing (Music-11) was conceived by Wootton, Jeffreys and Partners, as a DEC lookalike for Primos, the standard operating system for Prime minis.

It is a time sharing operating system which provides interactive facilities for multiple users on DEC minis and micros. Music fully emulates RT-11 functions, allowing a background RT-11 program without modification.

TSX Plus

TSX, and its successor, TSX Plus, are developments by the independent software house S&H Computer Systems of Nashville. The original system was conceived as a multi-user operating system for jobs developed under RT-11. Users appeared to have exclusive access to the system, although each was swapped between memory and disc as required. The total cost of the RT-11 licence and TSX was less than DEC's own multi-user system, RSX-11M.

TSX Plus was developed for PDP-11/23 systems. Mapping users into the extended memory avoids switching between memory and disc. All utilities are standard RT-11, except for independent TSX monitor.

Total cost of RT-11 and TSX-Plus is still substantially less than for DEC's time sharing system RSTS/E – and users do not have the problem of migration from RT-11 to RSX or RSTS/E.

Ada – good prospect for long-term survival

David Ferris is a software consultant based in the US and the UK. Covering technical, marketing and general business issues, he has worked with hardware, software and venture capitalist firms.

WE all know that languages like Cobol and Fortran have their faults, but equally we have seen the comparative failure of better languages like PL/1, Pascal and Algol. And now we have another contender – Ada.

It seems that there is something special about Ada. The language has powerful backers, and it is going to save a lot of people a lot of money.

In fact, Ada has a good chance of becoming widespread in the software world, especially for engineering, scientific and real time applications. Indirectly, it will probably make an impact on other people and organisations producing software, such as DP, because package vendors will choose it as an implementation language.

So, what is Ada? Basically, it is two things: a high-level language, similar in appearance to Pascal or Algol 68; and an "environment" – an integrated collection of utility programs which will make the lives of development and maintenance teams a lot easier.

For example, these include a clever text editor, interactive debugger, a file structure and utilities, and a module control or configuration management system.

So far, only the language has been fully defined. It is likely to become an Ansi standard this summer. Dr Lee Blaine, consultant and resident Ada expert at a major defence contractor, describes the current state of play: "Compilers are being written right now, and full compilers should become available by early 1983, including the VAX (mini) and some of the more powerful 6800-based micros.

"During 1983, I expect compilers to become available for a wide variety of machines, from IBM mainframes to personal computers."

As for the software development environment, several organisations are producing their own versions. These will also begin to appear by early 1983. Moves are afoot to standardise these but no agreement is in sight.

Indeed, there may well end up being multiple "standard" Ada environments, or no standard environment at all. In any event, even the most minimal environment standards are unlikely before 1984 or 1985.

The main motivation behind the language itself is simple: economics. Software costs far too much to develop and maintain. To alleviate this, Ada's designers focused on a number of major causes, notably maintainability, portability, and ease of development.

Maintainability. As any software manager knows, the expenditures of software maintenance are far higher than those of initial development. Previously written software is often intolerably hard to understand. Further, small changes often cause ripples of bugs to propagate throughout related software. In short, maintenance is a nightmare.

Portability. Hardware and software technology is far from mature, and the facts are that for the foreseeable future, computer users are going to want to move their software across machines and operating systems. Making software portable is currently a black art, unless you are only concerned with rudimentary programs operating in rudimentary ways (for example, straightforward batch Cobol or CP/M-Basic programs).

Programmer portability is also at issue. By providing a fully standard language, and a hopefully fairly standard development environment, programmers should be able to work on a wide variety of machines.

Ease of Development. The design, implementation, and testing of large programs is difficult, particularly because staff have to comprehend too many details at one time. The solution to this is to provide a language which easily permits development to be decomposed into many smaller tasks, which fit together in a conceptually clear way.

SOFTSELL

An explanation of how Ada works would require a technical discussion beyond the scope of this article. What counts is that Ada represents an advance in solving these central problems of the software industry.

However, for the benefit of readers familiar with obscure jargon, here is a list of reasons for Ada's maintainability, portability and ease of development.

- Strong data typing.
- Extensive support of separate, closely integrated module compilation.
- Provision of a wide variety of flexible control structures à la Pascal.
- User defined data structures.
- Allowing implementation details to be hidden.
- Support for concurrent, co-ordinated tasks.
- A macro-like facility to define entire sections of code generically.
- Great efforts to provide a comprehensive semantic definition of the language.

In addition, a variety of less technical methods are being used to achieve the design goals. For example, an organisation has been established which for a small fee will test compilers to check that they do not deviate from the standard, and have no extensions.

The name "Ada" has been reserved, and vendors will not be allowed to use it until they have passed the verification process, or make strong commitments to do so.

The technical strength of the language may recommend it highly, but Ada's proponents – notably, the US Department of Defence (DoD) – recognises that these strengths alone are not enough to ensure widespread usage. A number of things are being done to help Ada on its way.

For a start, the defence industries of the US, and probably the UK and major European countries, will be required to use the language. Large amounts of money are involved, so the aerospace and related engineering communities will be obliged to get up to scratch quickly.

In the engineering world programming staff tend to move around, so within a few years this section of the marketplace should be accustomed to Ada.

More subtle marketing techniques are also being used. Ada is being developed in such a way that the "not invented here" syndrome is minimal – especially important if Ada is to catch on in multiple countries.

The name "Ada" also reflects the marketing sensitivity of its proponents. It is a cute name, with a cute tale behind it – romantic stuff about an attractive young English aristocrat, dubiously claimed to be the first programmer ever.

The environments, too, are likely to influence matters. They should be attractive to staff accustomed to patching together an unco-ordinated set of development tools. Since the environments will be written in Ada, they should be fairly easily made available on a wide variety of hardware and operating systems.

Clearly, education presents a hurdle. The defence related industries will create a good marketplace for classes, and trade media – at least the engineering-oriented ones – will start running a lot of articles. Because of the convenience and instructive value of its environments, and because Ada reflects the state of the art, many universities will teach the language to students.

One way or another, from 1983 onwards, Ada training should not be hard to come by. However, consultant Blaine warns: "Organisations will have to plan carefully in retraining their staff . . . it's not going to be a simple matter of throwing money at it and hiring people off the street."

Beyond the defence community, where is Ada likely to become popular?

It appears that by 1990, the language will be in common use among engineers and the scientific community. Blaine agrees, adding: "It is worthwhile noting that despite the great interest being shown by defence firms, they are far from being in the majority. People giving seminars report that about 50% to 60% of their attendees come from process control organisations, with only about 20% or 30% coming from DoD-type contractors."

Software vendors are likely to use Ada, because its portability will enable them to sell to a larger marketplace. The vendors are painfully aware that today we are far from having achieved general standards in hardware and operating systems.

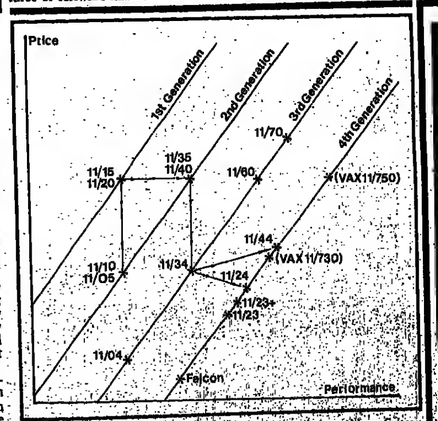
Ada's prospects must surely be less rosy for traditional 11/ applications. For the moment, the language is woefully lacking in necessary facilities such as sorts, DBMS and formatted Screen I/O. The designers intend these to be provided in time by third party organisations, which is reasonable.

This means that the facilities will not be readily available for several years, so serious DP usage will not be possible until then.

But even when these essential ingredients appear, DP will still probably hold off. The current tendency is either to use Cobol, or to use ultra-high level interpretative languages such as Focus or Natural.

In either case, Ada is left out, although this is not to say that DP will not use components of the Ada development environment, or products written in Ada.

David Ferris



PDP-11 progresses to VAX. "Prices" are typical, and vary with configuration.

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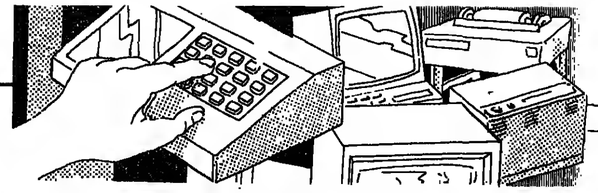

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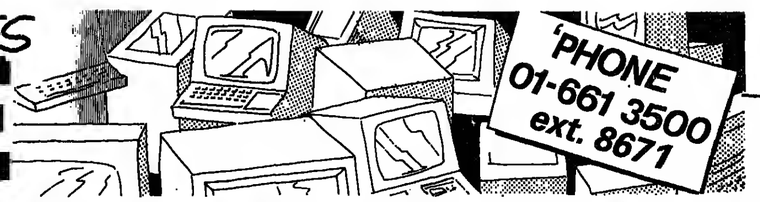

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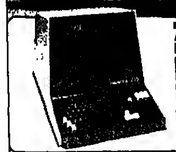

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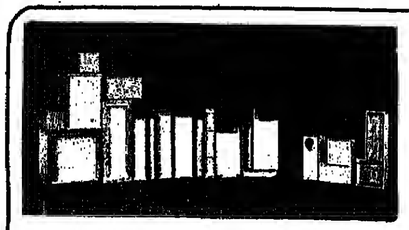

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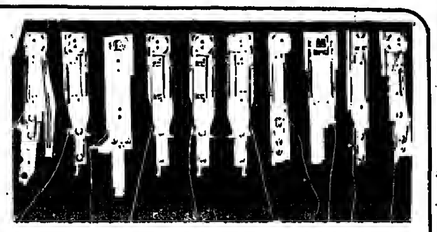

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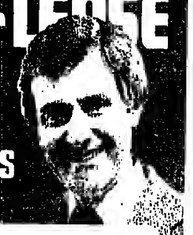

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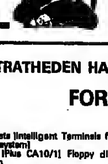

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to £9,500

COBOL Programmers are needed at varying levels of seniority with a minimum requirement of two years IBM experience on either OS or DOS systems. Knowledge of structured programming techniques, IMS databases or CICS would be a distinct advantage. Successful candidates will join one of several major new projects under development and they will also assist in the support of production systems.

After a period of familiarisation, the senior positions also offer responsibility of leading a small programming team.

DOS/VSE SYSTEMS PROGRAMMERS
MOVE TO MVS

to £13,000

The successful applicants will join a team of systems programmers supporting the existing software which includes DOS/VSE, VM/CMS, CICS, DL/1, SNA, VTAM, RAMIS II, etc., and evaluating/implementing new packages for the U.K. and six other European countries. Candidates should therefore be prepared for some foreign travel.

When the IBM 3080 arrives, all systems will be converted to MVS and therefore full training will be provided in the intervening period, making this an ideal opportunity for DOS Systems Programmers to expand their skills. The U.K. use of the machine in Germany is currently supported by the technical group in London.

ANALYST
SENIOR ANALYST

to £13,000

With a high level of user contact, these outstanding career opportunities are available for people with four to six years previous computing experience, a solid COBOL programming background and who have moved into an analysis and design role.

The persons appointed will be responsible for all aspects of major project development from specification to implementation. Previous experience of IMS and/or CICS would be a distinct advantage.

DATABASE ADMINISTRATION

to £14,000

Texaco wishes to appoint two people with experience in designing and implementing database systems and at least one must have a sound technical knowledge of either IMS or CICS/DL1. They will operate in a small team and their main activities will be:

- development and introduction of standards
- database design and implementation
- assuring security and integrity
- application development support
- performance monitoring and tuning
- education in database techniques and data dictionary

All employees are covered by a benefits package commensurate with other major oil companies (contributory pension scheme, 35 hour week, £1.85 per day LVs, etc) and their offices are located close to Knightsbridge underground station and to Hyde Park.

For further information and to arrange an early interview, please contact our consultants, Myriad Appointments, at their London office (01-353 0981).

Myriad Appointments Limited

90 Fleet Street, London EC4Y 1AA. Telephone: 01-353 0981, 24 hours
50a London Street, Reading, Berkshire RG1 4SQ Telephone: Reading (0734) 585862, 24 hours

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Opportunities also exist for work in Europe and North America.

We also have a continuing requirement for programmers and software engineers in our Defence and Industrial areas of business.

If you want a challenging and stimulating job and your experience matches the requirement, our senior staff will be pleased to meet you for a drink and informal chat about your career prospects with Systems Designers Limited.

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David Grove Associates
Bank Personnel Recruitment

DEC PDP SYSTEMS PEOPLE ARE YOU MOBILE — INTERESTED IN BANKING?

International Bank requires Programmers and Programmer/Analysts who are willing if necessary to relocate outside London.

Candidates must have a minimum of 3 years programming experience on mini-computers, preferably DEC PDP, programming in AIMS, BASIC+ and/or COBOL. For the Programmer/Analyst positions, practical analysis and design experience is essential, and some knowledge of staff supervision gained in a financial environment.

Applicants should also be prepared to travel throughout both the United Kingdom and Overseas.

INTERNATIONAL BANK JUNIOR PROGRAMMER/ ANALYST

c. £9,000

Prestigious City-based Bank seeks a Programmer/Analyst aged approximately 25 and with previous NCR & COBOL programming experience. Ideally the candidate will have gained his knowledge of Data Processing in banking, or financial applications.

For this post the candidate will need to be a conscientious and enthusiastic worker.

We have many more Data Processing vacancies both at senior and junior level, therefore, for more information about the above appointments and others, please contact BEVERLY COLLINS ON 01-236 7961.

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We would be pleased to hear from the following experienced people:

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The successful candidate should have at least 4 years' commercial programming experience preferably on BURROUGHS CMS range of machines (B90, B900, B1800).
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Hants **c. £16K + car**

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Type of machine not important. Candidates will be mobile and presentable.
Contact Terry Harvey.

Recruitment Consultant

Amersham **£Basic + Commission**

Our successful formula of experience, attitude and responsiveness aimed at providing the best possible service to clients and candidates alike has created the need for another consultant to join our team. Ideally you should have computer industry experience. You will be bright and ambitious with a friendly, gregarious nature.

Your success and our continued good reputation will follow from genuine care in responding to clients' and candidates needs. The hard sell is not our style. You will be given every encouragement to develop your own campaigns, to try new ideas and to apply initiative in building personal contact with your clients.

The work is hard but satisfying. The rewards are high for successful people.

If our style of operation appeals to you, please contact Terry Harvey anytime in complete confidence.

Development Manager from

H. Counties **£17.5K + car**

This is a rare opportunity to join a major company in a senior technical management position. 35 yrs. +, candidates must be capable of managing large numbers of technical people through an existing management team. Experience will include software and hardware development, budgeting and project control. Candidates will liaise with senior managers in other parts of the company.
Contact Terry Harvey.

Programmers CIS-COBOL

Berks. **to £9,000**

A highly professional company offering total micro based business solutions is seeking bright programmers. Ideally you will have worked in a CIS-COBOL, CP/M environment on commercial applications. Above average candidates with knowledge of Basic may also apply. These are first class opportunities to join a prestigious company at the forefront of the micro market.
Contact Tim Bridges.

DEC Prog/Analysts

Beds. **to £11,000**

The working environment, the company and its products all rate A.1. with this client. Experienced RSX11/Macro11 programmers will enjoy working on applications and systems for computer controlled analysis and measuring instruments. There are opportunities in special systems and standard product development. A physics degree would be useful. Some international travel.
Contact Terry Harvey.

Analyst Twin ICL

Swindon **£8,500**

Our client is a subsidiary of a national retailing organisation and household name. Preferably of degree standard you will have had 2-3 years commercial analysis experience and will work on the development and maintenance of interesting applications. Non-contributory pension scheme, flexitime working and 4 weeks holiday are just some of the 'large company' benefits offered.
Contact Tim Bridges.

Micro Dev H/W & S/W Engs

Berks. **£7.5K to £11.5K**

Our client is extremely successful in the manufacturing and supply of intelligent communications terminals. The existing development group is being expanded to provide product enhancement and innovation.
Ideally candidates will have a mix of hardware and software skills preferably gained on Z80 or 8080 micros. Bits may be to S/W or H/W. Successful company benefits.
Contact Terry Harvey.

Team Leaders HP3000 Fortran

London **c. £10,500**

Experienced team leaders are required by our client to lead small teams developing sophisticated enhancements to manufacturing systems for their customers. Ideally a graduate you will have two years experience on the development of mini based interactive commercial systems. Substantial career development potential is offered by this large international organisation.
Contact Tim Bridges.

Micro Graphics S/W & H/W Engs

Herts. **c. £8,500**

These are technically challenging positions in an attractive growth area of computing.
The S/W person will work in-house on specials. Fortran, Pascal, CP/M, 8086 assembler and DEC experience desirable. The H/W person will work on a mixture of in-house specials and customer support. TTL, micro and peripheral knowledge required. Excellent prospects for developing your career.
Contact Terry Harvey.

IBM COBOL Dev/Support

Berks. **to £11K + car**

Our client is an international company leading the field in the supply of application packages to IBM mainframe users. Seasoned COBOL programmers are required to join the European Technical Support Team. You will work in both a development and support capacity. Very attractive working conditions and benefits are offered by this progressive world-wide company.
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Systems S/W Development

Beds. **£9K to £12K**

A major minicomputer manufacturer is seeking additional software staff to work on a range of development projects. We would like to hear from graduate level programmers who are interested in operating systems, compilers, comms. networking, data management, etc. There is scope for long term career development and wide job interest. Relocation where applicable.
Contact Terry Harvey.

Micro Opportunities

Bucks. **truly £ neg.**

A highly successful and established company is moving into the commercial micro business market. A ground floor opportunity exists to evaluate, develop and support hardware/software in this area. The product range will include PET, APPLE, SIRIUS and CP/M-B. If you have a solid micro background in commercial systems and obvious flair, this is a golden opportunity.
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Technical Support S/W

W. Wsex. **to £12,500**

Take this opportunity to join one of the most successful computer companies of our time. You will need several years technical software experience to include real time, data communications and/or database systems. Analysts with banking or financial systems experience would also be of interest. You cannot fail to be impressed by this client. Higher salary but no car for City office location.
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Systems Consultant

Berks. base **to £12K + car**

A market leader in systems software is seeking a consultant to service a client base of 15-20 in S. England. Database experience, preferably CICS and ENVIRON/I and solid commercial applications background required. Dealing with IBM systems you will act within a post sales capacity giving advice, guidance and lectures to customers. Presentation is therefore important.
Contact Tim Bridges.

Design Eng. S/W Biased

Herts. **to £12,000**

This small R & D team is seeking an experienced programmer/engineer to work on M6800 network of processors used to control sophisticated instrumentation in audio, video and film recorders. Desirable experience from: M6800, 6809, Pascal, Assembler, CP/M, UNIX, MDOS, multi-processors, ICE, digital design, servo-systems and recording industry. Graduate level in engineering discipline preferred.
Contact Terry Harvey.

Applications Eng. Comms.

Berks. **c. £10.5K + bonus**

A hardware biased position with a requirement for some software understanding. Candidates should have experience in development or support of a range of data comms. products., e.g. modems, multiplexors, data concentrators etc. The work involves technical proposals, network planning and pre and post sales support. Non-contrib. pension. Possible car for senior candidates.
Contact Terry Harvey.

DEC/Motorola Automation

Herts. **c. £9,000**

There are attractive openings for software and hardware designers to work on advanced process control and automation systems for a wide range of industrial applications. The company develops systems based on PDP11 minis and Motorola micros including their own operating systems software. Real time experience in comms., data acquisition or military systems useful. Excellent benefits.
Contact Terry Harvey.

Programmers Pascal/Ass't

Berks. **to £10,000**

Our client is a very well known manufacturer and market leader in word/information and data processing systems. Programmers with 2-3 years experience are required to work on the development of systems and application software. Assembler and/or Pascal experience is essential and a good working knowledge of communication oriented systems is desirable.
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Open letter to technical and commercial job seekers at all levels:

We are here to help you. Our free service to you is advice and counsel in identifying the most suitable position for the development of your career. Our consultants have held senior positions in the computer industry. They have the experience to understand your needs. If we do not have the position you want, we are prepared to help you find it.
Why not accept this invitation to talk over your ideas with us.

Write or telephone (02403) 28383 during office hours —
we are always ready to discuss these and many other interesting positions.
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IBM COBOL, CICS & QPAC
IBM CICS (DMS)
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IBM IMS DB/DC, ADF TEAM LEADERS/SYSTEMS DESIGNERS
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HONEYWELL DPS4, IPS, COBOL
HONEYWELL DPS8 COBOL PROGRAMMERS
ICL Applicetions Manager.
ICL ME29 COBOL
ICL Ranga COBOL
ICL SYSTEM 10 ASSEMBLER
ICL SYSTEM 25 ASSEMBLER
PDP RSTS/E BASIC + or BASIC + 2 some with DATABOSS
PDP RSX11M BASIC + 2
VAX SYSTEL
VAX COBOL
HP3000 COBOL
WANG COBOL or BASIC
PASCAL PROGRAMMERS
TANDEM any levels (URGENT)
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VENTEK DATAPOINT, DATABUS
DG INFOS, COBOL
INTEL PLM Programmers
INTEL 8086 ASSEMBLER
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Saverel urgent requiremente for Analyst Progremmars or Progremmers with IBM GSD RPG11.
(Retraining will be given on RPG111) – Surrey to £11K.
HP3000 COBOL PROGRAMMERS or ANALYST PROGRAMMER. Any commercial experience, various locations including Surrey, Middlesex, Berkshire.
Excellent saleries plus relocation package.
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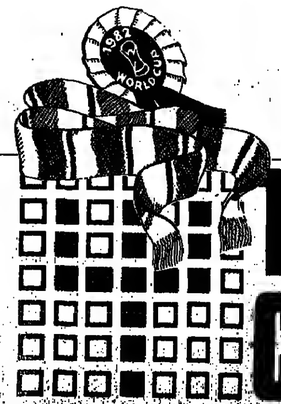

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Applied Communications Inc., a US Corporation with offices located throughout the USA, is a major Systems House specialising in on-line systems on Tandem Non Stop Computers. ACI has installed more then forty sophisticated switched networks with a significant proportion in the financial sector. The UK subsidiary is expanding its Customer Services Division which specialises in supplying designers, applications programmers and system support staff and facilities to a wide range of advanced users. Specific assignments are:

Systems Designers
c £12000

We require Systems Designers to work on the specification design and implementation of large on-line transaction processing systems based on Tandem equipment. These are resilient, non stop developments. Applicants should have at least 4 years experience, with a minimum of 2 years spent in a design role. Preference will be given to candidates who are well qualified in the field of interactive systems development.

Software Engineers
c £12000

These appointments are for Software Support Staff who provide Tandem system expertise to clients, including performance analysis, system tuning, capacity planning and the development of operational procedures. Some pre-sales support involvement can be anticipated. Previous experience should include at least 4 years in a systems environment preferably in the area of software support. Knowledge of interactive database applications or communications systems is desirable.

Cobol Programmers
c £10 000

Our programmers provide program design and development experience to a wide variety of clients. These positions involve the development of on-line applications in the Tandem non stop environment. A minimum of 2 years experience of application development in COBOL is required. Familiarity with interactive database systems and/or banking and financial systems would be a distinct advantage.

Most appointments involve travel to client sites which are generally in the City, although flexibility to work throughout the UK and the US will be an important consideration. All salaries are negotiable as the Company is prepared to provide remuneration in line with ability and experience. Full training on Tandem Systems will be provided and there will be opportunities to work in other areas of this rapidly expanding Company.

To discuss your future career with Applied Communications, telephone Alan Moxon or Chris Peet on 01-423 2131. During out of office hours (evenings or weekends) telephone Alan Moxon Whitgnade (0582) 873106 or Chris Peet Walton-on-Thames (09322) 22644 or write to

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- RING LEN CRAY AS SOON AS POSSIBLE ABOUT THESE VACANCIES.

In our new London office based at 35 Piccadilly we have many permanent London vacancies for various levels of experience. Whatever your requirements we would be happy to talk to you about the career opportunities which we can offer. The following are a small selection of the jobs currently registered with us.

CENTRAL LONDON
VARIOUS IBM **£9000**
A major company with excellent salaries is seeking Analysts, COBOL programmers, Systems Programmers and Network Personnel for their IBM DOS/VS installation.

WEST END
COBOL PROGRAMMER **£9,000**
If you have 2 years COBOL, are a graduate and have experience of MINI COMPUTERS, then this exciting environment would interest you.

NORTH LONDON
HONEYWELL SITE **to £10K.**
Analysts and COBOL programmers with experience of IDS/TDS on L66, or if you possess L6 expertise, then this major company has several career opportunities.

CITY
ANALYST/PROGRAMMER
DEC **to £10K**
A banking organisation has a vacancy for an Analyst/Programmer with a solid COBOL background and experience of DEC hardware. Banking experience is a benefit.

WEST LONDON
IBM PROGRAMMERS **£ VARIOUS**
Many vacancies exist with this highly successful company for IBM COBOL programmers with CICS and DL/1. Relocation available.

HOLBORN **to £10K + BENEFITS**
SYSTEMS ANALYST
Insurance company seeks experienced analyst with ICL 2900 experience-VME/B. Good prospects.

S.W. LONDON
PROGRAMMERS **£8,000**
Expanding organisation has programming vacancies if you have 3 years COBOL under OS on Modern IBM hardware.

CITY
HONEYWELL PROGRAMMER £7½K + BENEFITS
A Honeywell COBOL Programmer is sought with L64 and TDS experience for a major insurance company. Excellent benefits available.

WEST LONDON
ACCOUNTING ANALYST **£8½K.**
An Analyst with a very good accounting background is sought for MIS development. DP experience a secondary requirement.

CITY
BURROUGHS EXPERTISE **£ VARIOUS**
Programmers with large Burroughs systems experience, also ALGOL Systems Programmer, sought for a major Central London Burroughs user.

CITY
SYSTEMS DESIGNER **to £11K +**
Experienced Systems Designer with minimum 3 years programming sought for dynamic and forward looking project.

N.W. LONDON
PROCESS CONTROL **£ VARIOUS**
Several vacancies exist for persons with Real-Time process control experience. DDP experience is essential otherwise various programming languages including FORTRAN, RTL 2, COPAL, is sought.

Contact LEN CRAY on 01 439 8985 or write to the address below.

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London W1V 9PB
Telephone 01-439 8985

ANALYST/PROGRAMMERS

MIDDLESEX **COBOL/BASIC** **TO £12,000**

Opportunities have arisen within an extremely successful software house based in Wembley for a number of analyst/programmers to supplement their existing teams. The candidates required will currently hold senior Programmer positions with some analysis responsibility or be Analyst Programmers with at least two years' annlysis experience in a commercial/finnncial environment, preferably working with Prime, Dec or Hewlett Packard equipment. Good career prospects and company package can be expected. RM5919

IBM COBOL or PL1 PROGRAMMERS

SURREY **£10,000 + MORTGAGE**

This large International company seeks to recruit several Programmers as part of their expansion plans. Applicants should have a minimum of 18 months' IBM COBOL or PL1 preferably with DATABASE experience although training will be offered. The company retains IBM 4300 machines and can offer applicants a wide variety of projects. Career progression is envisaged into Analysis. Company gives an excellent Benefit Package including Subsidised Mortgage. REF: S.6260

IBM ASSEMBLER PROGRAMMERS

LONDON/H. COUNTIES **TO £14,000**

We have at present been retained on behalf of many clients throughout London and the Home Counties to recruit IBM Assembler Programmers with a minimum of 18 months' experience. If you are looking for applications or Systems Programming work we can help you. Several of these positions offer excellent scope for development including training on CICS and DATABASE. Some companies offer training in Systems Programming with minimum of 2 years' commercial Assembler experience. Whatever your level of experience phone now for further details. REF: S/GEN 1

IBM COBOL CICS PROGRAMMERS

CITY **TO £11,000 + MORTGAGE**

We have been retained by a prestigious International Bank to recruit two Programmers or Analyst Programmers, to work on a variety of projects including Foreign Exchange. Candidates should be able to demonstrate a good understanding of CICS, a minimum of 6 months' experience would be sufficient. These positions offer a very good opportunity to work on large development projects. TRAINING IN DATABASE and an excellent company benefit package. If you have at least one year's Cobul ring now for further details. REF: S.6213

PROGRAMMER ANALYSTS

SURREY **IBM SYSTEM 34/38** **TO £10,500**

Dntascene are looking fur Programmers wishing to develop their analytical skills. Opportunities exist at two locations in North Surrey. Both of these companies are about to install system 38 equipment and after conversion are embarking on development projects fully utilising the facilities uffered by the System 38. Ideally you will have upwards of 18 months' experience in either RPG II or RPG III. In return for your skills both companies are offering a high career development curve. For further details ring Datascene quoting REF: M.

RPG II RPG III

LONDON/H. COUNTIES IBM 34-38 **£7,500-£14,000**

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[9892]

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[9921]

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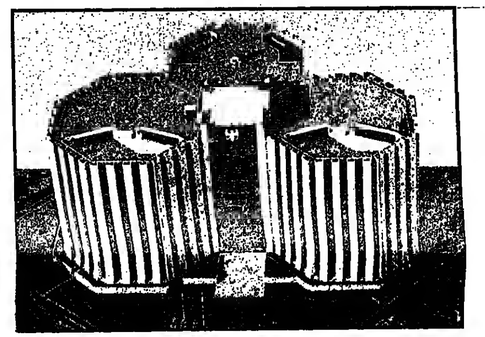

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For further details, please send your cv to: John Callow, IAL, Aeradio House, Hayes Road, Southall, Middlesex, UB2 5NJ. Tel: 01-574 5432. Please quote the appropriate reference.

(9829)

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For further details, please send your cv to: John Gallow, IAL, Aerolin House, Hayes Road, Southall, Middlesex UB2 5NJ. Tel: 01-574 5412. Please quote Ref: M139.

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DATA PROCESSING INFORMATION SYSTEMS MANAGER

The Hymatic Engineering Company Limited, designs and manufactures high technology equipment for the aerospace and defence industries, in brand new purpose-built premises in Redditch New Town.

The Company is now seeking to employ an Information Systems Manager to control a recently installed Manufacturing and Costing System.

Applicants should be in their mid 20's/early 30's and have some experience of a Data Processing operation. Knowledge of a Honeywell Level 62/DPS4 whilst helpful, is not absolutely essential.

Individuals should be capable of developing information systems and investigating business problems with Senior Management, whilst also providing User Departments with practical advice.

A Degree, or similar level of education, in a related subject is desirable.

This position carries a good salary and there is an excellent contributory pension scheme including life assurance.

Please write for an application form giving brief summary of qualifications, experience, present position and salary, to:

Personnel Officer
Hymatic Engineering Co. Ltd
Burnt Meadow Road, North Moons Moat
Redditch, Worcs. B98 9HJ

Hymatic

(9833)

IIRS IRELAND

IIRS is the national agency for industrial research and technology in Ireland.

ANALYST/PROGRAMMER

is required in the Computer Section which provides a service to the Institute.

The installation comprises PDP computers (under RT11 and RSX-11M) and a 4 MB VAX machine under VMS. The principal languages used are FORTRAN, BASIC and COBOL with a variety of packages including FMS and DATATRIEVE.

The successful applicant will be required to maintain the operating software and provide technical support to the Institute's on-line users.

Candidates should have a degree or equivalent qualification with a minimum of four years' relevant experience.

Experience of DEC software would be an advantage.

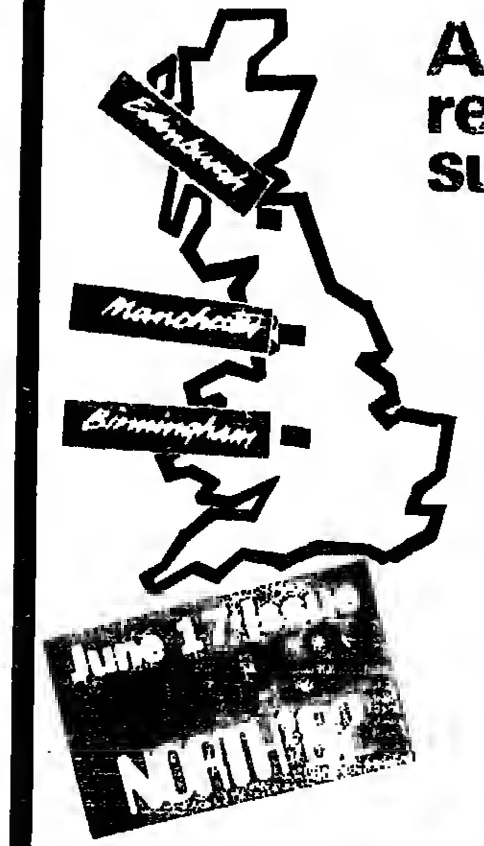
Appointment will be at either Scientific Officer or Senior Scientific Officer level depending upon qualifications and experience.

SALARY RANGES:
Scientific Officer: .... IR£ 7,032-IR£10,856 per annum.
Senior Scientific Officer: .... IR£11,403-IR£14,959 per annum.

Non-contributory superannuation scheme and other benefits apply.

Application forms and further details available from:
PERSONNEL DIRECTOR,
INSTITUTE FOR INDUSTRIAL RESEARCH & STANDARDS,
BALLYMUN ROAD,
DUBLIN 9,
IRELAND.
Telephone: 01-370101. Extn. 416/417.

(9813)



A major recruitment supplement

to coincide with a major computer show

Belle Vue
MANCHESTER
June 22-24 1982

To coincide with Compec North the June 17 issue of Computer Weekly will contain a special recruitment supplement. Editorial will cover the computer job market in the Midlands, North of England and Scotland. Topics covered will be relevant and written by industry experts and staff writers covering a wide range of subjects linked to the job market in these areas. The issue will be distributed in the normal way to Computer Weekly readers throughout the UK, and will also be available to visitors from the Computer Weekly stand at Compec North.

This issue is perfect for recruitment advertisers – the editorial environment is right, the target audience is captive, and as Computer Weekly has a total circulation of over 100,000 copies every week, advertisers can be sure their advertisements will be read.

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ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

CONSULTANTS, ANALYSTS and PROGRAMMERS
LONDON SURREY SUSSEX KENT

London

Programmer	Must have at least 3 yrs exp. of COBOL and the ability to deal with people at all levels. To £11,000 + Bonus.
Programmer	Deg. Maths/Computer Science. With indepth experience of developing Real Time Systems on PDP 11s using FORTRAN or CORAL. £Highly Neg.
Programmers	With at least 2 years' commercial exp. using COBOL and/or RPGII. To £10,000

Surrey

Project Mgr/ Systems Analyst	2/3 yrs exp. of manufacturing Control Systems Accounting Systems, Distribution, Payroll, Financial Modelling etc. DEC PDPII systems, DIBOL and RSTS an advantage. c £10,000 + Car.
Analyst/Programmer	At least 3 yrs exp. of Sales, Purchase and Nominal Ledgers and Sales Order Processing. Knowledge of interactive systems development using a high level language (e.g. COBOL) essential. To £10,000
Programmer	Min 2 yrs DEC PDPII with RSX 11M exp. with good knowledge of COBOL to c £9,000.

Sussex

Systems Consultant	Degree of professional accounts qual. Must have experience of Systems Analysis on Mini Computers. £Neg.
Programmer	Graduate with at least 1 yrs commercial exp. using Mumps or Basic. £8,000 + a.e.e.
Programmer/Analyst	Good RPGII experience with some analysis work. c £9,500.

Kent

Programmers	with good knowledge of IBM 38 exp. of RPGIII preferred but RPGII would be considered. To £10,000.

For further details of these and other current vacancies please contact:

DEREK STANLEY
0293-514071 – 8a.m. – 8p.m.
ATA COMPUTER RECRUITMENT
34 The Boulevard, Crawley
(out of hours answering service)

(9858)

BRITISH TOURIST AUTHORITY
COMPUTER OFFICER
c. £10,000

An experienced Computer Professional is required for this new post. Responsibilities will include the operational management of a new Mini installation in the Finance Department and the provision of technical advice to line Managers. An Internal Working Party is co-ordinating development of Data Processing throughout the authority, which has two Mini Computers, several word processors, and a number of bureau arrangements, and the Computer Officer will provide the technical input to this Working Party.

The successful applicant will need to have had Programming/Analysis experience with commercial applications and a sound knowledge of existing equipment. He/she will be expected to make a substantial contribution to the enhancement of existing systems and have an ability to communicate with users of all levels.

This post is located in the Old Marylebone Road, NW1, convenient for Edgware Rd., Paddington, Baker St., and Marble Arch Stations. But written applications should be sent to:

Mrs. Linda Taylor, Personnel Officer

BTA

Queens House, 64 St. James's Street
London SW1A 1NF

(9832)

ACCOUNT ENGINEER
(HARDWARE)

We have a vacancy for an Engineer to lead a team of Systems Engineers at our Harlow site.

The ideal applicant will have IBM 370/158 experience or similar CPU experience. The position involves management of the account and would be suitable for a Senior Engineer seeking to further his career.

Salary will be commensurate with the responsibilities and among other benefits, a company car, bonus and pension scheme, are offered.

If you wish to take advantage of this opportunity to advance your career with the United Kingdom's largest independent computer maintenance company, please contact:

Mr. A. Meckereth
Area Manager
Computer Field Maintenance Ltd.
Ground Floor
Graphics House
Farrars Road
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CFM
A Member of the IAC Group

Computer Operator

£8,940-£8,633 pa
(including shift allowance)
(2 shifts, 7.30 a.m.-11 p.m.)
IBM 4341 – VM – DOS/VSE

If you have at least 18 months' IBM operating experience and are looking for a position in an expanding installation where your efforts will be recognised, then our career graded operator post may be of interest to you.

Our machine is a 2 megabyte IBM 4341 (hopefully to be upgraded to 4MB) with 3370 FBA Disks, tapes and printers, plus an ever increasing local and remote T.P. network.

The installation runs DOS/VSE – power as a cardless system, controlled on-line through VDUs under QUOTA II, (via SHADOW II which is currently being replaced by CICS), as part of the VM – Master System.

We also use a variety of software aids and packages such as the CA – DYNAM range for file control.

Also housed in the computer room is a WANG SYSTEM (VS80) with 3 x 75 mg disks and a tape drive, which is used not only for WP but also DP projects.

Starting salary will depend on experience to date and the post is open to men and women.

For further information telephone 01-863 5611 and ask for David Clark Ext 2213 or Ken Durtnall Ext 2206.

Application forms, returnable within 14 days of the appearance of this advertisement, from the Controller of Financial Services, London Borough of Harrow, PO Box 21, Civic Centre, Harrow, Middlesex, HA1 2UJ, telephone 01-863 5611 Ext 2339.

Harrow Finance

ZIMBABWE
HARARE

Our client, a large retailing and manufacturing company, is seeking DP professionals to join their fast growing DP department. At present, they have Data General equipment with on-line, real-time and database facilities. Specifically, they need:

SYSTEMS ANALYSTS
PROGRAMMER ANALYSTS

Final interviews will be conducted in July in the main cities of the UK. For further information, contact Anne Breuer at:

Prescot Computers Limited
11/13 Broad Court
Covent Garden
London WC2B 5QN
Tel: 836 8885/6

(9849)

SPARE-TIME PROGRAMMERS WANTED

Must be adroit in Assembler and Cobol, and keen to work on a Z-80-based micro at the I/O level. Pay will be on a mutually-agreed basis per working module. Hardware is located in Windsor.

Please phone Sean O'Connell on Windsor 58182 (bus.) or Reading 471307 (home) for more details.

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A New Development Team

Hertfordshire

Principal Consultant/Designer £ Negotiable
Senior Team Leaders/Consultants to £15,000
Senior Programmers to £12,000
Programmers to £9,000

Our client is embarking on the development of one of the largest multiple node networks of computer communications systems in Europe. Being a large, successful manufacturing company they have the facilities and credibility to handle a project of this size. Early study and planning phases are initiated but the main design and implementation teams will be newly recruited.

Principal Consultant/Designer The candidate for this position will probably be a national figure. You will have considerable experience and knowledge of communications and networking at a state-of-the-art level and be capable of representing the company at International meetings.

Senior Team Leaders/Consultants will have several years systems software implementation experience, typically at operating systems level on minis and micros. They are expected to have a good appreciation of hardware architecture. Experience of communications systems would be advantageous.

Senior Programmers & Programmers will have two or more years experience of systems software implementation or technical applications development on minis or micros. Essentially they will be bright people who will be attracted by the scope and challenge offered by a project of this magnitude.

Usual successful company benefits including relocation assistance where appropriate.

Apply in confidence to Terry Harvey by sending personal and career details, or contact him for an application form, evenings Gt. Missenden (02406) 4705 or daytime as below.

HR

H. R. Associates Limited
Executive, Computer and Technical Personnel Consultants
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Our immediate domestic and international consulting needs are detailed below. If you are of a professional disposition, skilled and dedicated, and wish to join our growing permanent or contract staff, please contact us in respect of these and future opportunities.

INTERNATIONAL

RPGII, IBM S/34	Analyst/Programmer	Africa
MSA, General Ledger experience	Analyst	USA
COBOL, DOS, IBM 4331	Programmer/Analysts	USA
COBOL, IDMS, CICS	Systems Analyst,	USA
Foreign Exchange experience	Programmer/Analysts	

UK

COBOL, IMS/DB and/or DC	Designers, Programmer/Analysts	Home Counties
HP3000	Designer/Analysts; Programmers	London
Prime	Designer	London
PL/1	Analyst/Programmers	Essex
IBM S/38 or S/34	Analyst/Programmers	Home Counties, London
Burroughs 6800, COBOL	Analyst/Programmer; Programmer	Home Counties
MUMPS, PDP 11	Programmer	Aberdeen
COBOL, CICS, DL/1	All levels	Aberdeen
Redifon R850	Senior Analyst	Home Counties
Experience of interactive systems	Analyst/Systems Designer	Aberdeen

For more information please contact:

Tangent

Resources Department
TANGENT COMPUTER SERVICES
102/106 South Street
Romford, Essex.
Tel: Romford (0708) 750201
(24 hour answering service)

QUEEN ELIZABETH COLLEGE
Kensington
(University of London)

ADVISORY PROGRAMMER

Applications are invited from graduates for this post in the Computer Unit. The Advisory Programmer advises College users of computing services – both staff and students – about the facilities available locally and within the University of London, and gives programming support. The main service is provided by a local Digital VAX 11/750 and by the University of London Computer Centre (CDC/Amdahl/Cray). Much use is also made of microcomputers. Main languages are FORTRAN and BASIC, knowledge of PASCAL and ALGOL-68 would be useful. Initial appointment will be in Grade 1B or on the first four points of Grade 1A (Currently £6,287-£7,290) depending on qualifications and experience; London allowance of £1,036 in addition. Appointment is required as soon as possible though the possibility of appointing a person graduating this summer is not excluded.

Further details and application form from College Secretary, Queen Elizabeth College, Campden Hill Road, Kensington, London, W8 7AH, tel: 01-937 5411 ext. 209.

(9870)

SOUTH COAST

If you want to know what vacancies are currently available in all Southern Counties ring

Jeff Minords
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CBS APPOINTMENTS
Bournemouth (0202) 202155 (Office) or 0202 884891 (Eves & Wends)
Agy.

(9821)

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SWITZERLAND – CIRCA £25,000

required to join small team developing power generation/distribution energy management systems. Age 35-45. Pref. qual. USc. Experience database design process control techniques. Desirable experience DEC/VAX using DMS, knowledge of FORTRAN, PASCAL, CORAL.

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(9859)

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COMPUTER STUDIES AND MATHEMATICS DEPARTMENT

LECTURER II/SENIOR LECTURER (2 POSTS)

Applications are invited for the above posts, duties to commence on September 1, 1982, or as soon as possible thereafter. Successful applicants will participate in the general teaching of computing and systems analysis but with special interest in:

Information Requirements Analysis – Ref. No. L41/16.
Data Processing and System Design – Ref. No. L41/17.

Applicants are required to demonstrate a strong research interest in their particular area. One of the posts may carry particular responsibility for the organisation of industrial placement for students on the BA in Systems Analysis.

SALARY SCALE:
L11 £6482-£9624 (bar) – £10431 per annum
SL £9624-£11328 (bar) – £12141 per annum

The appointment will be made on the appropriate scale according to relevant previous service/experience. (Progression from the LII scale to the SL scale is in accordance with the provisions of the Burnham Further Education Report.)

For further details and an application form, to be returned by June 22, 1982, please contact the Personnel Office, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol, or ring Bristol 656261 Ext. 675.

Please quote appropriate Reference Numbers in all communications. (9828)

COMMUNICATIONS PROCESS CONTROL VIEWDATA

Modular Computer Services has been extremely successful in supplying high performance, highly reliable computer systems to the above marketplaces.

Our Marketing Division provides our sales force with comprehensive technical support and we are now seeking the following key individual who will assist us in maintaining our current high level of achievement.

Technical Marketing Analyst
c. £11,500 on goals and Company Car

This is a demanding pre-sales role which will involve the successful candidate in giving presentations, running benchmarks, configuring systems and providing technical solutions to customer problems. Ideally we are looking for an individual with these skills but we would be willing to train an applicant with a suitable software background. A programmer with drive and an outgoing personality looking for a move in to a sales environment would find this an excellent career opportunity.

Other attractive Company benefits are a non-contributory pension scheme, free life assurance and free B.U.P.A.

For further details ring SUE HAMPSON on WOKINGHAM 785711 or write to MODCOMP, MOLLY MILLARS LANE, WOKINGHAM, BERKSHIRE.

MODCOMP

Mature Senior Analysts

Business Analysis/Project Leadership

Central Herts — Five Figure Salary

(Relocation Assistance Available)

Substantial database and on-line systems development plans have created the need to recruit two systems professionals to augment an expanding project team environment.

As Project Leader or senior member of the team, you will be afforded total project involvement assuming responsibility for the investigation, proposal, justification, specification, development and implementation of systems to meet our user requirements.

We would expect that candidates possess a sound data processing background of which probably no less than five years have been spent as a Systems Analyst. Moreover, you should be confident in your ability to liaise effectively with all levels of both user and computing orientated employees.

Our requirement to recruit is immediate: our ability to respond to the execution of current plans is vital – your experience could provide the missing link.

For immediate reaction as to your suitability, contact Andrew Carter and Rex Ashcroft on 01-935 0671 (24-hour answering service) or submit a detailed curriculum vitae to the London office.

Technical, Sales & Management Appointments

(16/6)

Specialist Computer Recruitment Ltd

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London W1M 5HS
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021-236 3761

NORTH
Blackfriars House, The Parsonage,
Manchester M3 2JA
061-833 0427

BELGIUM
Avenue Louise 327,
Boite 4, 1050 Bruxelles
010 322-640 7151/71

HOLLAND
Wilhelminapark 92,
1071 EN Amsterdam
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MANAGEMENT INFORMATION SYSTEMS MANAGER

Salary negotiable in the range £12.5 to £14.5K
Company car provided plus excellent benefits package

Based: West London
Environment: IBM 4331, DOS/VSE, CICS, DL1, COBOL

We have been retained by our client to recruit a Manager who will assist them in the ongoing development and running of their Data Processing facilities.

The job will involve the following duties:

★ Project management and control.
★ Appraisal of packaged applications software.
★ Technical involvement in the operations sphere.
★ General budgetting, administration and man management of a small DP Department.

The position will necessitate travel to both the USA and the Far East from time to time.

Ideally candidates should have a good technical knowledge of IBM equipment and the ability to liaise successfully with all levels of management.

For further detailed information concerning this position please contact Chris Morrow on 01-837 0451 or alternatively send your C.V. to the address below for consideration. Please quote reference number RC10.

TOTAL SELECTION LIMITED
388 City Road, London EC1V 2QA
01-837 0451

(8827)

SYSTEMS TECHNICAL MANAGER

Good Project Leading and ICL experience

From £14,000 + Car + Benefits — Surrey/Hants Border

Our client, a major distribution company, part of a multi-national organisation, wish to appoint a computer professional to the position of Systems Technical Manager.

The Position
Reporting to the Data Processing Manager, the successful candidate will be responsible for control of the development team, and provision of Systems and Programming services within the Company.

The Requirement
Applicants will essentially be considered for their proven project management experience and leadership qualities. Strong COBOL programming background is vital and preference will be given for previous ICL experience (ideally VME) and a distribution background.

The Opportunity
An ideal opportunity for a Project Leader to move up the management ladder and grow with a rapidly expanding and dynamic company.

The Contact
For more detailed information and an immediate interview – telephone Peter Jezaph on Camberley (0276) 64252 during working hours, or evenings and weekends on Guildford 76511.

Alternatively, write enclosing a detailed C.V.

TRIDENT COMPUTER SERVICES PLC

Trident Computer Services PLC,
The Parade, High Street,
Frimley, Surrey.

(8838)

We need...

Team Leaders·£11·5k, Analyst·Programmers·£10·5k, and Programmers·£8·5k.

Our client is a household name company manufacturing consumer durable products for the UK and European markets. They are part of a major British industrial group, and in their thirty years of existence have become market leaders in their industry.

They are on the point of moving their computer department to brand new accommodation at their factory in **South Hertfordshire.**

The current installation is an **ICL 2950** running under **DME 2** with programming in Range Cobol. Programming is all on-line using Minimac, and other software includes TPS Access, MTS enquiry and Prosper financial modelling package.

Planned developments at the new site include upgrading the current hardware, the implementation of a major manufacturing and production control package and the introduction of a micro/mini based stand-alone spare parts inventory system.

The planned move will take place within the next two months and to coincide with the installation of the computer in the new site, our clients urgently need to recruit six people in the following positions.

2 Team Leaders, with at least five years in DP and experience of analysis and programming in a similar technical environment.

2 Analyst/Programmers, with at least 3 years in DP and sound ICL 1900/2900 DME Cobol.

2 Programmers, with at least 18 months ICL 1900/2900 DME Cobol.

All these positions carry a benefits package which includes subsidised mortgage, company pension scheme, a profit sharing scheme and a free life assurance.

These positions are to be filled as soon as possible and successful applicants will commence work at the new site at the beginning of August. Initial interviews will be held in central London, so if you want to be part of a new team please contact Bob Burnett on 01-836 8411 (office to 5.00 p.m.) or 01-997 0866 (eves & w/ends) or fill in and return the coupon to:
Computer People London, Hertford House, St. Martins Lane, London WC2N 4EE.

..to build our team

Post to: FREEPOST, Computer People London, VLI House, St. Martins Lane, London WC2N 4EE.
Name
Address
Tel (home) (day)

Computer People London

The European Molecular Biology Laboratory, a research institute founded by 10 member states and situated in Heidelberg, Germany, invites applications for a position at the EMBL Outstation at the Deutsches Elektronen-Synchrotron (DESY) in Hamburg as

COMPUTER SCIENTIST

The successful candidate will provide software and hardware computer support for scientists engaged in research activities in structural biology using X-ray synchrotron radiation from the DORIS storage ring. The support includes:

– maintenance of systems software for PDP 11/45 and PDP 11/24 running under RSX 11/M
– maintenance and development of CAMAC data acquisition systems
– maintenance and improvement of software packages for the analysis of data
– design and implementation of extensions to these systems
– installation and maintenance of systems software for a VAX 11/780 with VMS systems and linking to existing machine.

The successful candidate should have appropriate qualifications and substantial experience in design and implementation of extensions to the above systems as well as maintenance and improvement of software packages for the analysis of data.

The net salary offered will be above average, in addition to which certain allowances such as family allowance, children and non-resident allowance are payable, depending on personal circumstances.

Please write briefly for an application form, quoting reference No. 82/8 to: EMBL, Personnel Section, Postfach 10 22 09, D-6900 Heidelberg.

(8811)

PROGRAMMER

Walton Container Terminal require a PROGRAMMER/RELIEF OPERATOR. The main functions of the post would be:-

(a) To write program modifications and assist in the writing of new program routines.
(b) To relieve Computer Operators when they are sick or on leave.
(c) To assist in the administration of computer information.

The system is a medium-sized "Datapoint ARC" running under D.O.S. and Datashare. Preference will therefore be given to applicants with Datapoint programming experience. Salary negotiable according to experience.

WALTON Container Terminal

Write for an application form to – Mrs Beryl Trantham, Secretary to Managing Director, Walton Container Terminal Limited, The Dock, Felixstowe, IP11 8SG.

Closing Date 21.6.82.

(8809)

THE Comac CONTRACT

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For further information on the above vacancies also Overseas vacancies please contact Mike or Elizabeth

We have a reputation for moving quickly and efficiently so for an informal chat telephone us today or send your c.v. as soon as possible.

(8836)

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27 TOWN CENTRE, HATFIELD, HERTS.
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24 HOUR ANSWER SERVICE

PROJECT MANAGER
£12k – £14k p.a.

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A very high standard of work is expected from all our staff who follow a structured methodology for project development.

An IBM 4341 is in use with DOS/VSE and VM. So far, seventy terminals are attached.

All current projects involve on-line development using COBOL and CICS. APL and other personal computing facilities are being introduced and will run alongside our more major developments.

We are seeking a project manager for one of our three development teams, whose duties will include
– planning and organising work of a 5-member team through all stages of project development
– undertaking major tasks within the feasibility, analysis and implementation stages

He or she should have seven years' D.P. experience and be able to demonstrate the ability to perform the above tasks.

In return, we offer a friendly working atmosphere in pleasant modern offices off Kensington High Street, excellent training facilities, generous holiday arrangements, flexitime and an active sports and social club.

For further details ring Tony Eldred on 01-937 5464 ext 662.

The Royal Borough of KENSINGTON AND CHELSEA

Application forms are obtainable by postcard only, quoting Ref. CW/640, from the Personnel Service, The Town Hall, Hornton Street, London W8 7NX. Closing date for applications 28th June, 1982.
Applications are welcome from suitably qualified disabled persons.

(9876)

LIVERPOOL INSTITUTE OF HIGHER EDUCATION
(CHRIST'S AND NOTRE DAME COLLEGE AND ST CATHERINE'S COLLEGE)

Lecturer in Computer Studies

Applications are invited for the position of Lecturer in Computer Studies to teach courses with BA (General) with honours and B.Ed (hons) modular degrees. Topics covered include programming Language structures, Computer Architecture, Information Systems and Design, Software Design and Developments and Digital Electronics.

Applicants should have a degree in a subject containing Computing as a major component and/or recent industrial or commercial experience. Salary on Lecturer II/Senior Lecturer Burnham scale £6,462-£12,141 (under review).

Further details about the post are available from the Rector, Liverpool Institute of Higher Education, Stand Park Road, Liverpool L16 9JD, to whom letter of application should be submitted by 25th June 1982.

(9875)

OEM SALES
disk drives/magnetic media

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Perhaps sales management, if you have the talent and inclination. On the other hand you could increase your experience, income and market value by working for a computer manufacturer. The days of simply "Peddling Iron" are virtually over and so the demand for people who are able to sell "Solutions" as opposed to "Tools" is increasing. Of course, the transition is not simple. First, you must have proven sales ability, then you need a well informed, credible and confident organisation that knows where such opportunities exist, plus the professional skills to protect your interests and evaluate your career potential.

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– just ask any computer manufacturer!

Contact Alasdair Scott or Peter Hubble (01-734 9776), Roger Pyett (061-445 0648), or Alan Williams (05432 56812).

(9884)

LONDON & SOUTH — 23 Oxford Street, London W1. (01) 734 9776
MIDLANDS & NORTH — 01 Bore Street, Lichfield, Staffs. (05432) 56812

Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

Systems Analyst

Clarks Limited is the largest manufacturer of branded shoes in the U.K.

To give further impetus to the development of a range of new commercial systems, we are now looking for another Systems Analyst.

The successful applicant will work in a progressive IBM installation and will have a record of achievements in the areas of system development and implementation.
Experience of order handling routines and/or warehousing procedures would be an advantage.

We offer a starting salary of around £10,000 p.a., together with an annual bonus and non-contributory pension scheme. A full relocation package is available to enable you to move house to this very attractive part of Somerset.

Please write to John Holdaway, Staff Services Manager, Box 112, Clarks Limited, Street, Somerset for an application form or phone Street (0458) 43131, ext 2661.

Clarks

(9882)

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The post is located within an Internal Audit Section of 16. The postholder will be expected to be highly self-motivated and to make a positive contribution to the development of the computer Audit function in Croydon.

CROYDON

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(9850)

ANALYST/PROGRAMMER

The company has a 256 Mb IBM System 34, and over the next two years is planning to install several new pieces of equipment including a large System 38 next year.

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SALES BIT

Quality of management – 13

The recipe for successful sales training

AS I mentioned last week, training salespeople is not easy. They are demanding students — their enthusiasm can contribute to raising the success of a course beyond the expectation of the trainer, or can equally destroy any chances of real achievement if their interest is not stimulated and their respect earned.

The recipe for achieving a successful sales training course is not simply a matter of choosing the right topic. Equal attention must be given to other aspects of the educational process. The trainer must be:

i) Fluent in his presentation. There is nothing less convincing than a hesitant trainer.

ii) Able to deal effectively with side-issues that may be generated by the main topic. Students expect their tutor to be well-informed on the art in general as well as the subject in hand.

iii) Well-provided with supporting information. "I don't know" does very little for the trainer's personal credibility.

iv) Supported by professionally produced visual aids. Tatty, freehand flipchart illustrations reduce the impact and credibility of both the trainer and the subject matter and do nothing to raise the presentational standards of the students.

v) Professional in his attitude and delivery. Being well-informed is not all. Tutorial impact must be at least as good as might be expected of a first-class sales presentation and the importance of every topic must be stressed. If this cannot be done with absolute conviction either the trainer has got it wrong or the subject should be omitted altogether.

vi) Aware of the need for providing students with good food and accommodation as well as a potentially stimulating social environment. If students are unhappy with their surroundings this usually has an adverse effect on their attitude towards study.

vii) In tune with the needs of individual students as well as the class as a whole. Most salespeople are reluctant to give up precious selling time, but to do so for a tutorial that teaches them nothing is aggravating, to say the least of it. Individual student profiles can often be a great assistance in optimising the effect of training.

There are many reasons why sales organisations never get around to providing sales training, though most can be interpreted as little more than excuses. In many cases the cause is little more than lack of [illegible]ness.

Company size has [illegible] relevance to the justification of training by intern[al] means. Whether the sales team is a handful or a [illegible]load, every sales manager must have the capability and commitment to teach his people basic selling skills and provide the wherewithal to revitalise specific techniques.

The strength of self-produced training is that [illegible] external organisation can [illegible] as aware as yourself of the ramifications of your product in your market [illegible] against your competitors.

Putting someone on a generalised "Basic Sales Training" course that apparently covers [illegible] variety of industries but [illegible] a multitude of commodities seldom gives any [illegible]ful benefit to the student [or] his employer.

Specialised courses [on] specific selling techniques [or] those which are dedicated [to] a particular industry or commodity are a different matter.

Of course, fluency in a subject does not necessarily imply an ability to teach it to other people, and when it comes to presenting a substantial training course as opposed to a specific lesson, the demands are often beyond the capability and experience of the typical sales manager.

Unless he lives within the luxury of a major corporation with its own training facilities, his only real alternative is to consider the use of an external training organisation.

The role of the external trainer must be to provide education that is customised to the specific needs of the sales organisation. This is probably best achieved by providing product and applications tuition from internal sources, while using the external trainers to provide selling training as well as creating the structure of the course and controlling its management.

Cost justification of training is not possible in finite terms.

It is likely that a training company providing a bespoke course will still use some standard training modules in order to minimise costs. Nonetheless, it is a reasonable rule of thumb to expect that the time taken to prepare a customised training course will be of equal duration to its actual presentation.

Next week I shall be writing about some of the day-to-day hazards of running a sales training course.

Alan Williams

PUZZLE ANSWER

THE important thing here is to select simple terms in which to formulate the equation. One easy way is to assume that Unit of Time = time taken for one step to move out of sight at the base of the escalator, with n = number of steps showing.

We can then say that the first trip involves: (A) 50 steps in n – 50 units, and the second trip 75 steps in n – 75 Units. This comes down to: (A) 1 step in $\frac{n-50}{50}$ Units, and (B) 1 step in $\frac{n-75}{25}$ Units.

Now, since one step during (A) is known to take the same time as three steps during (B), we can state that $\frac{n-50}{50} = 3 \times \frac{n-75}{25}$ [illegible]

which gives n as 100 [illegible]

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